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WINTER 1989

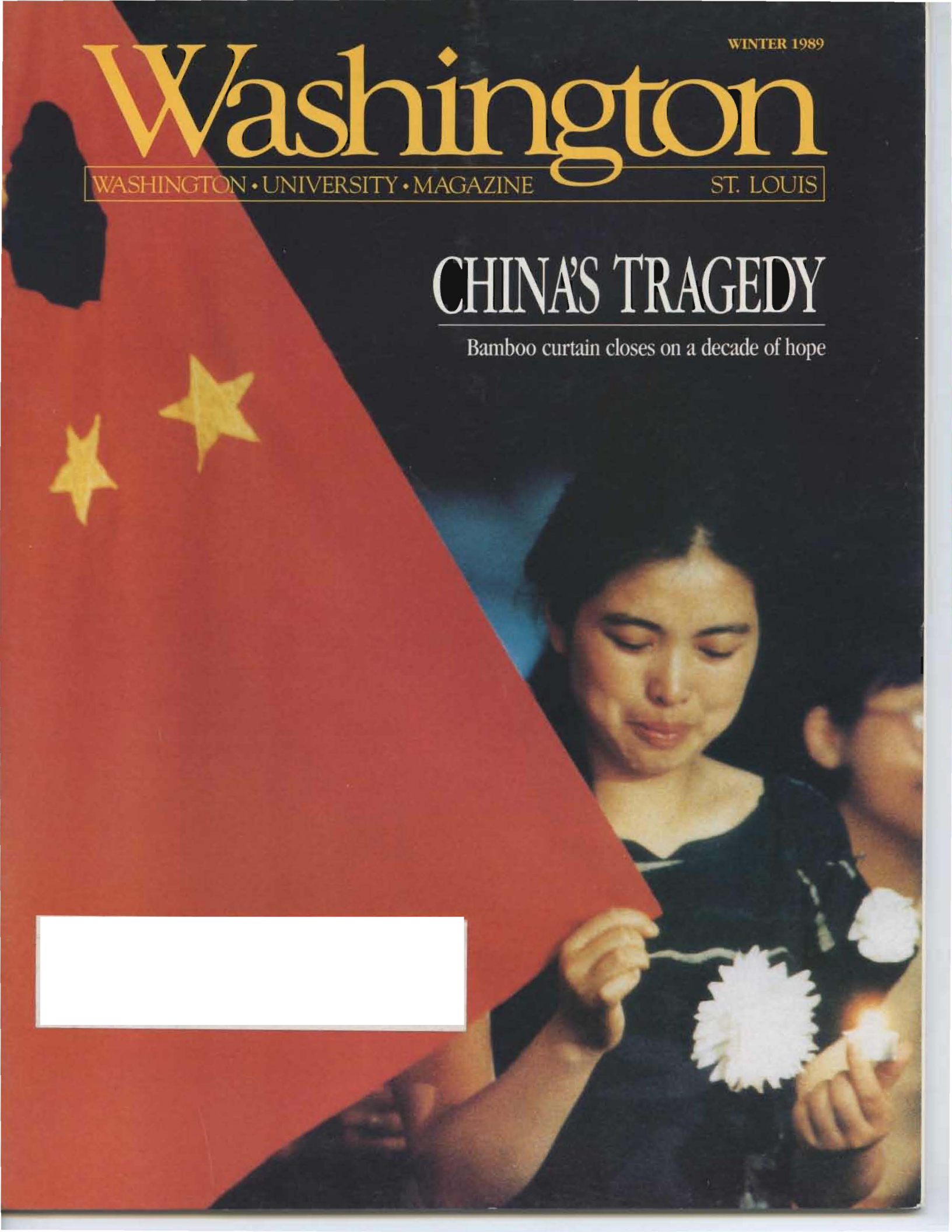
Washington

WASHINGTON • UNIVERSITY • MAGAZINE

ST. LOUIS

CHINA'S TRAGEDY

Bamboo curtain closes on a decade of hope





Andean beauty: Ornithologists, birders, and tourists travel from all parts of the world to view the Andean cock-of-the-rock. Dressed in brilliant orange plumage with contrasting black wings and tails, the males gather in a lek, or clearing in the rain forest, throughout the year. Biology Professor Richard W. Coles, director of Tyson Research Center, photographed the cock on his most recent trip to Venezuela to observe the country's birds.

Washington

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ST. LOUIS

Vol. 59, No. 3 • Winter 1989

Cover: At a candle-light vigil on Washington's campus, a young woman mourns the deaths of the demonstrators who lost their lives in China's 1989 pro-democracy movement. Photo by Joe Angeles.



Bullock: Painted earthenware, one of about 600 figurines that comprised the principal furnishings of the tomb of Lou Rui, Prince of Dong'an Commandery during the Northern Qi Dynasty (550-577). See page 20.

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After a decade of remarkable growth and promise, China falls prey to Party hands.

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Magellan Mission to Gather Priceless Data

The Magellan Mission to Venus, launched May 4 from the Kennedy Space Center, promises a treasure-trove of new knowledge about the solar system. But it also threatens to raise the stream of computer-generated space data to the flood stage.

"In terms of understanding the solar system, the next 10 years in space will be priceless," says Raymond E. Arvidson, professor of earth and planetary sciences and a member of the radar investigation group for the Magellan Mission. "But there is a corresponding data explosion that must be met. The situation will become critical by the time Magellan data return to Earth. At first glance, this seems to be simply too much of a good thing, but the implications are deeper than that."

In the 11 years since the last planetary mission, scientists have made tremendous advances in remote sensing (computer imaging)—advances that promise to make Magellan one of the most enlightening space explorations ever undertaken. These same advances, however, have led to sensors that can generate data sets far more voluminous and complex than those of the past, says Arvidson.

According to Arvidson, the Magellan Mission will map by radar up to 90 percent of the Venusian surface with a resolution as fine as the width of two football fields, providing unprecedented "snapshots" of Earth's sultry twin. Magellan alone will return enough data to double the existing digital image data for all the previous planetary missions combined. Closer to home, the amount of data generated from various Earth Observing System spacecraft could encompass a staggering one trillion bits a day by the mid-1990s, accord-



Herb Weisman

Solar sojourns: Arvidson and students view a geologic map of the Mojave Desert. The area was imaged by Arvidson and NASA officials in preparation for mapping the Venusian surface.

ing to a July 1988 National Research Council report.

Arvidson is the director of the University's remote sensing laboratory, one of 13 NASA Regional Image Facilities. He and NASA scientists at the Jet Propulsion Laboratory in Pasadena, Calif., the U.S. Geological Survey in Flagstaff, Ariz., Massachusetts Institute of Technology, and Brown University will be the prime caretakers of the complete collection of radar imaging of Venus from the Magellan Mission. Those images will be computer-interpreted and assembled to make global maps of Venus—data that will help the scientists explore possible volcanic activity, changes in the planet's climate, and similarities between the Venusian and Earth surfaces.

The numerical bits generated by Magellan, Arvidson warns, could be an enormous jumble of meaningless data without the computer power to interpret them—a classic case of "water everywhere, but not a drop to drink."

To help stem the enormous tide of uninterpreted numerical bits flowing back to Earth, the W.M. Keck Foundation has awarded a \$300,000 grant

to Washington's Department of Earth and Planetary Sciences. The money will be used to purchase new computer equipment for the department's remote sensing laboratory.

"The gift is vital to take us where we want to go," says Arvidson. "It's a beautiful match between the challenge we face with the new data and our desire to make the 1990s the most exciting space decade of the 20th century."

Magazine Wins Recognition

For the third time in four years, *Washington University Magazine* has been named one of the top university magazines in the country by the Council for Advancement and Support of Education (CASE). The magazine, which was awarded a bronze medal in 1986 and a silver medal in 1987, received a bronze medal in the 1989 CASE competition. This year, CASE awarded 10 gold medals to university magazines, 12 silver medals, and nine bronze medals. The magazines were judged on content, editing, writing, design, photography, and printing quality, as well as the use of budget and resources.

Executive Institute "Complicates People's Lives"

As chairman of the tax department and a partner at the high-powered law firm of Thompson & Mitchell, Millard Backerman, on a typical day, doesn't ordinarily engage in discussions on modern bureaucracy or religion in the Islamic world.

But Backerman developed a fondness for and curiosity about such topics as a fellow in Washington University's Executive Institute for Advanced Study. Launched one year ago by University College, the institute offers business and community leaders a chance to step back and reflect, in a stimulating environment, on subjects affecting society and their professional and personal lives.

The institute teams corporate and community leaders with Washington

faculty in a series of monthly seminars held October through April. The programs apply insights from the humanities and social sciences to help executives discern broad trends, respond creatively to change, and make informed ethical decisions.

The institute's goal is "to complicate people's lives," offers Wayne Fields, associate professor of English and co-coordinator of the institute. "The complications involve recognizing other perspectives and the implications of those perspectives."

According to William Kirby, University College dean and institute co-coordinator, "Successful executives today can't afford to be too specialized. Leaders must in large measure be generalists, open to new ways of looking at the world and the workplace."

The theme for the 1989-90 Execu-



Joe Angeles

Lee Liberman, chairman of Washington's Board of Trustees and chairman, president, and chief executive officer of Laclede Gas Co., was a fellow in last year's institute.

tive Institute is "Loyalties: Conformity and Diversity in Modern Life." Central topics will explore such questions as: How do we decide between conflicting loyalties? How do we rank their importance? What justifications do we make for our choices? How do American values of loyalty compare with those of our partners and competitors in Asia, the Soviet Union, Western Europe, and the Middle East? And how do we resolve conflicts between national economic development and global environmental danger?

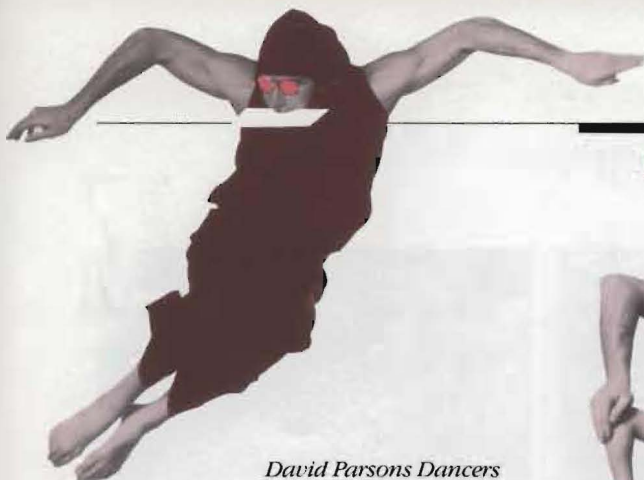
Library Receives \$1 Million Gift

A \$1 million gift to expand the John M. Olin Library was made by Mrs. John S. (Anne) Lehmann, a prominent St. Louis civic leader and philanthropist. An ardent supporter of the University, Lehmann also contributed to the construction of the medical library at the School of Medicine. In 1981 she established a visiting professorship at the School of Law in memory of her husband, John S. Lehmann, a 1910 graduate of Washington and founder of the Petrolite Corporation. Both Lehmann and his father were trustees of the University for many years.



Courtesy of the Missouri Historical Society

First lady: The 1989-90 academic year marks the School of Law's 120th anniversary as the first chartered law school in the United States to admit a woman. In the fall of 1869, Phoebe Couzins, above, commenced legal studies in what was then Washington's two-year law department, commonly known as the St. Louis Law School. Couzins graduated in 1871.



David Parsons Dancers

◆ FRONT ◆ RUNNERS



Lois Greenfield

Curtain Rises at Edison

Edison Theatre's 16th season brings to campus a greater number of internationally renowned performers this year. "Meet the Artists" programs and a miniseries for youngsters, too, will inspire and enlighten audiences of all ages. To ensure continued excellence in programming, the theatre formed Friends of Edison Theatre, a support group that debuted this fall.

OVATIONS! 1989-90

Market Theatre of South Africa
You Strike the Woman, You Strike the Rock
Fri., Sept. 22; Sat., Sept. 23,
8 p.m.

National Theatre of the Deaf
The Odyssey
Fri., Oct. 6; Sat., Oct. 7, 8 p.m.

David Parsons Dance Company
Fri., Oct. 27; Sat., Oct. 28, 8 p.m.

Serious Fun! at Lincoln Center
new arts from America's avant-garde cabarets
Fri., Dec. 1; Sat., Dec. 2, 8 p.m.

Kronos Quartet
Concert 1: Fri., Jan. 26, 8 p.m.
Concert 2: Sat., Jan. 27, 8 p.m.

The Waverly Consort
Sat., Feb. 10, 8 p.m.

American Indian Dance Theatre
Fri., Feb. 23; Sat., Feb. 24, 8 p.m.

Spalding Gray
Fri., March 2; Sat., March 3, 8 p.m.

Kodo Drummers of Japan
Fri., March 16; Sat., March 17,
8 p.m.

Laurie Anderson
Fri., April 20; Sat., April 21,
8 p.m.

Susan Marshall & Company
Fri., April 27; Sat., April 28,
8 p.m.; Sun., April 29, 2 p.m.

For program and ticket information, call the Edison box office at (314) 889-6543, or write Campus Box 1119, One Brookings Drive, St. Louis, MO 63130-4899.

Study Analyzes Effects of Alzheimer's on Driving Ability

Each time an Alzheimer's patient gets behind the wheel, the devastating symptoms of the disease—chiefly memory loss, impaired judgment, and confusion—create the potential for disaster. A new study at the School of Medicine will analyze the effects of Alzheimer's on driving ability.

Washington People in the News

Several key University appointments and faculty honors have been announced in recent months.

Charles S. Nolan, formerly director of undergraduate admissions at Boston College in Chestnut Hill, Mass., became assistant provost and dean of admissions on August 1.

Nolan's professional activities include chairing Boston College's Admissions Advisory Committee and serving as a faculty member for the New Admissions Officers Training Program, sponsored by the New England Association of College Admissions Counselors.

Nolan holds a bachelor's degree in business administration from Curry College in Milton, Mass., a master's degree in social sciences from Bridgewater (Mass.) State College, and a doctorate in higher education administration from Boston College.

Richard J. Smith became dean of the School of Dental Medicine July 1 and will guide the school through its closure. Smith replaces David A. Bensinger, whose appointment as dean in 1986 was scheduled to end June 30, 1989, to coincide with his planned retirement.

"People with Alzheimer's disease who continue to drive may risk their own safety and that of others as well," says Linda Hunt, an occupational therapist at the University. "With our population growing older and cases of Alzheimer's disease on the rise, it's essential that we find an objective method for deciding whether patients can continue to drive or if their driving should be restricted or stopped."

Hunt, supervisor of adult community services and director of the driving program at the School of Medicine's Irene Walter Johnson

Smith has been associate dean at the school since 1987 and was assistant dean from 1985-87. He is also professor and chairman of the Department of Orthodontics and professor of biomedical science at the dental school. In addition, he serves as an adjunct professor of anthropology in the College of Arts and Sciences and is on staff at both Barnes and St. Louis Children's hospitals.

Gerhild Scholz Williams, professor of German and comparative literature and chair of the Department of Germanic Languages and Literatures, took on the additional duties of associate provost in August.

A specialist in German and French medieval and early modern literature, Williams has been a member of the Washington University faculty since 1975. She also chairs the Medieval and Renaissance Studies and the Linguistic Studies committees.

Photographer and academician **Joe Deal** joined Washington University as dean of the School of Fine Arts in August. Deal succeeds James Davis, acting dean of the School of Fine Arts since 1988.

Before coming to Washington

University, Deal was professor of art and associate dean of the College of Humanities and Social Sciences at the University of California, Riverside.

Deal's photographs, which mostly focus on the western United States, are in the collections of many major museums, including New York's Metropolitan Museum of Art and Museum of Modern Art, the Boston Museum of Fine Arts, the Los Angeles County Museum of Art, and the International Museum of Photography at George Eastman House in Rochester, New York.

Harvey R. Colten, Harriet B. Spoehrer Professor and head of the Department of Pediatrics at the School of Medicine, and **C. Robert Cloninger**, professor of psychiatry and genetics and head of the Department of Psychiatry, were two of 40 new members elected in June to the prestigious Institute of Medicine of the National Academy of Sciences. New members are chosen by currently active members for major contributions to health and medicine or to related fields, among them social and behavioral sciences, law, administration, and engineering.

Colten's research focuses on understanding the biochemistry,

genetics, and cell biology of inflammation in such disorders as cystic fibrosis, arthritis, asthma, juvenile diabetes, autoimmune diseases, and inflammatory disorders of the intestinal tract. Cloninger is internationally recognized for his work on the clinical assessment of personality and his adoption studies in Sweden.

William H. Daughaday, Irene and Michael Karl Professor of Medicine emeritus and a lecturer in medicine, and **Emil R. Unanue**, Edward Mallinckrodt Professor and head of the Department of Pathology, were elected fellows of the American Academy of Arts and Sciences in May. The academy is one of the nation's oldest societies of leaders in science, scholarship, the arts, and public affairs.

Daughaday, an internationally acclaimed endocrinologist, was elected in recognition of his research on basic hormonal action, specifically that of growth hormone. Unanue, head of the School of Medicine's pathology department since 1985, is an immunopathologist who has centered his research on the interactions among immune system cells.

Institute of Rehabilitation, is investigating the effects of senile dementia of the Alzheimer's type (SDAT) on driving ability. Her study is the first to evaluate on-the-road performance of drivers with SDAT.

"The problem of intellectually impaired older adults who drive is of major importance, yet there's virtually no information available that addresses this issue, nor do state laws provide a unified approach toward testing the skills of aging drivers," says neurologist John C. Morris, assistant professor of neurology and neurological surgery and

a physician with the University's Alzheimer's Disease Research Center. "Hunt's study will provide much needed data."

Systematic research on the effect of SDAT on driving ability is just beginning, but pilot studies based on surveys and questionnaires indicate that drivers in even the earliest stages of SDAT pose a threat to community safety.

Hunt's year-long study will focus on 40 patients with questionable and mild SDAT and will consist of two parts: a pre-driving evaluation conducted by an occupational therapist,

and an in-car assessment conducted by a driving instructor certified to work with handicapped drivers. Both parts of the evaluation were developed by the Irene Walter Johnson Institute of Rehabilitation as part of its driving program, which was established in 1984 to teach disabled patients compensatory driving techniques. ■

Contributing writers: *Tony DiMartino, Tony Fitzpatrick, and Carolyn Sanford*

THE RISE AND FALL OF THE PEOPLE'S REPUBLIC

After a decade of remarkable growth and promise,
China falls prey to Party hands

By James W. Davis

Just a decade ago, in 1979, the People's Republic of China was opening up to Americans. The Cultural Revolution was a painful memory, and the Chinese warmly welcomed American universities, businesses, and tourist groups. Students from Chinese universities began to study abroad in increasing numbers. It was an exciting, promising time.

That summer, I accompanied a Washington University delegation to Shanghai, Nanjing, and Beijing. We went to visit universities, make acquaintances, and build relationships. Washington University and Shanghai Jiaotong University became sister universities.

In the years since, academic activities involving scores of American and Chinese universities have flourished. American scholarship on China developed apace. American professors traveled to China to do research, teach, and arrange exchange programs. Graduate students went to hone language skills and do fieldwork for dissertations. Tens of thousands of Chinese students have come to the United States to earn advanced degrees. Many came to Washington University to study in fields as diverse as comparative literature, chemistry, computer science, and medicine.

The future of all this activity is now in doubt. Due to the bloody crushing of the democracy movement in June, the summer of 1989 may turn out, in a sad and painful way, to be as significant as, in a hopeful way, 1979 was. The People's Republic of China, at least the current regime, has shown itself to be unambiguously repressive in its firm attachment, by force of arms, to state control. The climate for learning, research, discussion, and exchange has clearly worsened. For a variety of reasons—political, strategic, economic, humanitarian—relations with China will continue. But they won't be the same.

Despite superficial appearances and real economic changes, China has not been a free country in any sense that a Westerner might understand. It is, in fact, a one-party totalitarian state with a long history of repressive

James W. Davis is a professor of political science at Washington University.



Rise and shine:

Above, the people of Shanghai begin their days as early as 5 a.m. during the summer months to avoid the blistering heat of the afternoons.

Forging friendships:

Right, Chu Wu-Hua, president of Shanghai Jiaotong University, welcomes Political Science Professor James W. Davis to his city in July 1979.



Herb Weisman

violence and strong official distaste for dissent. Yet the thousands of students that have come to the United States and to other Western democracies since the end of the Cultural Revolution developed a taste for Western freedoms. And many Chinese intellectuals have long been familiar with Western political thought.

This was the background for student demonstrations that began in April and were forcefully ended on June 4, 1989. On April 18, thousands of students in the pro-democracy movement took to the streets in Beijing. On April 22, more than 100,000 students gathered in Tiananmen Square to demand freedom of the press and freedom of speech. On April 29, demonstrations took place again in Beijing, Shanghai, Nanjing, and elsewhere. On May 13, 2,000 students began a hunger strike in Beijing.

On May 20, martial law was imposed in Beijing. At first, unarmed troops were used, but they were unsuccessful in quelling the

Leadership Rules with Blood, Iron

The political murder of unarmed civilian demonstrators in Beijing continues to appall people around the world who had hoped for a peaceful resolution of the recent crisis. It has particularly shocked American "friends of China" who have allowed their aspirations for Deng Xiaoping's rule to cloud their understanding of it. To anyone familiar with the history of the People's Republic and its leaders, however, it cannot come as a surprise.

The octogenarians who still determine Chinese policy spent half of their lives as revolutionaries out of power, fighting an authoritarian, military-dominated regime. They took over, not by speeches or majority resolutions, but by armed rebellion in which hundreds of thousands died.

Welcomed by most Chinese not as liberators but as the lesser of two evils, they reunified China by blood and iron. The years of their consolidation of power, 1950-53, witnessed, according to the most sober estimates, the killing of between 2 and 5 million "local despots" and "counterrevolutionaries" in the name of "class struggle."

Several times in the course of their careers, today's elderly leaders have been faced with political challenges from urban intellectuals and students. The response has always been harsh repression. In 1957, Deng Xiaoping, then party general secretary, opposed the brief relaxation of political controls that led to public dissent during the "Hundred Flowers" campaign. Deng then led the big anti-rightist campaign and transferred down to the countryside several hundred thousand urban citizens, including scores of China's



William C. Kirby

most talented writers, scientists, and engineers inherited from the pre-1949 government. This struck a serious blow to China's economic and technological development from which it has yet to recover, but political orthodoxy came first.

Political orthodoxy became difficult to define during the Cultural Revolution (1966-76), when warring factions in the leadership mobilized student groups. But even then there was unanimity on one point: Truly autonomous political movements were anathema.

After Deng Xiaoping's return to the political heights in 1978, limited criticism of officialdom was tolerated for about a year, or so long as its main targets were the disgraced Gang of Four. When the critique went further, and called for the implementation of human rights guaranteed in the constitution, its

leaders were arrested and sentenced to long jail terms.

In 1983, renewed public interest in political liberalization was met with a crusade against such "spiritual pollution." In 1987, in the wake of student demonstrations for democratization, the suppression took the form of a nasty campaign against "capitalist liberalization."

From the early 1950s until just a few months ago, however, political murder had not been necessary to maintain government power. And in the early 1980s, the regime could even be said to be reasonably popular, thanks to its repudiation of the agricultural policies of its first 30 years. But the leadership has never been willing to compromise on political control. The fact that it called in the army for what can only be termed a period of military terror shows it believes the existence of its state, founded in military conquest, is now at stake.

The leaders may be right, for their actions of recent months may call forth domestic and international reaction that will ultimately shorten the life of the People's Republic of China. In any event, there is nothing in their own lives to suggest that they thought long and hard about alternatives. When Deng speaks about a million casualties being a small number for China, he is speaking from experience.

William C. Kirby, a China historian, is dean of University College and director of Asian Studies at Washington University. He is spending a sabbatical this year at Harvard University as visiting professor of history and as research associate at the John K. Fairbank Center for East Asian Research. His book on The International Development of China's Economy, to be published by Stanford University Press, is forthcoming.



demonstrations. On June 3 and 4, troops equipped with tanks and automatic weapons broke up the Beijing demonstration. An unknown number of students—hundreds? thousands?—were killed outright by bullets and tank treads. Since June 4, activists in many cities have been hunted, arrested, tried, and shot.

The aftermath of the revolt added insult to injury. The weeks following the Beijing massacre can be summed up in a few words: sweep up, crack down, rewrite, deny. The Chinese official version of events highlighted the deaths of 300 heroic soldiers at the hands of “hooligans,” “ruffians,” and “counterrevolutionaries.” Arrested students subjected to interrogation were shown on Chinese television agreeing with the official version. But Western photographers and TV crews were there, and some Chinese have since come out with their stories. The killing won’t be easily forgotten.

In a historical and political context, sending students abroad to study, opening the country both to tourists and business professionals, freeing selectively the economy, and increasing expectations inevitably put the po-



Taking cover: Above, a bicyclist falls as the Chinese Army begins its attack June 4 on the pro-democracy demonstrators in Beijing.

Rally in Chengdu: Left, students march from their universities into downtown Chengdu, where people gathered before an exhibition hall to hear speeches and obtain news reports. Law Professor Charles McManis, who photographed this scene, traveled to China in mid-May to inaugurate a faculty exchange program with Sichuan University. “I saw the country go from a renewed sense of hope in that it had gotten a voice, to a sense of terror,” he recalls.

People's Republic? or Party's Republic?

We can all recall from the news of the past months the heroic efforts of the Chinese students and their uprising against the government of China. And though many of us may believe that the Chinese government is corrupt and that democracy should replace dictatorship in China, few of us understand the true motivation behind the students' hatred and resentment toward the government.

The death of Hu Yaobang on April 15 sparked anger and grief in the Beijing students. Their anger was directed toward Li Peng and the other conservatives, for it was they who had put down Hu for supporting the people's rights. The students' grief arose from the realization that they would now have no one to look to for leadership in their struggle against the despotism of the government. What began as a mourning for the students' hero of democracy in Tiananmen Square turned into a brutal suppression by the government.

If one understands the Chinese way of thought, one might never have guessed that such a confrontation could be possible, for the Chinese respect authority greatly. So what could have driven the students to such radical behavior? The answer is that they were striving for democracy.

But what does the word democracy mean to the Chinese people? If one defines democracy as a person's freedom to control certain aspects of one's life, then the Chinese live under a government that is the total opposite of democracy, for the government controls nearly every aspect of one's life.

On top of that, rampant corruption means that people who have relatives or friends in government positions, or who have the right connections, enjoy a privileged life while those not so fortunate are condemned to live miserably. Not having the right connections can mean not getting an appointment to see a den-



Eric Balder Sygna



J. Langdon Syme

Taking a stand: Thousands of students spoke out for greater freedom and less Party control by sporting their convictions, top, and marching in hunger strikes.

tist, not being able to check out a book in a library, or not surviving in a business that one starts.

The Chinese government owns all banks, hospitals, schools, factories, and most companies. Anyone is allowed to

start a business; however, those having connections with government officials will be able to buy raw materials at a lower price, get help from the government in finding markets for their goods, pay less taxes, and generally make a profit and stay in business.

Bribes to government officials to send children abroad to study are ubiquitous. In all business transactions, such as bidding for government contracts, bribes allow people to get preferential treatment. They also commonly result in individuals paying less taxes or avoiding regulations.

Loans to companies are based not on the firm's needs, but on the company's connections. Those in high positions can easily obtain money immorally—a government official in charge of a company can embezzle funds—and maintain large bank accounts abroad.

Furthermore, all press and communication in China is controlled by the government. The brutal massacre of thousands of citizens in Tiananmen Square was described by Chinese TV and radio as a small incident of trouble-making students who attacked the sol-

diers. According to reports, the soldiers were patient at first and started shooting only when they could no longer bear the attacks.

TV and radio programs help to brainwash the people into thinking that democracy and liberal ideas are bad for them and that the present government is best for everyone. Of course, a government that is so good need not be changed; and indeed, the possibility for change is not an option for the people since the government officials are appointed by the government itself.

In fact, the government not only denies any power to those it governs, it also has a justification for its gross unfairness, which insults the intelligence of the people. The government claims the people are ignorant and thus can't make their own decisions. Since the government is all-wise, it therefore makes the right decisions for the benefit of the people. That is the reasoning behind not allowing the people to vote.

The students have fought against their oppressive and corrupt government; they strove for certain freedoms that all people are entitled to. These include free press, freedom to associate, and an end to the corrupt practices of government officials.

The sad reality is that the Chinese people are not allowed to vote for the very individuals who will have the power to control them utterly, and the people are punished for expressing their opinions against the government. The bloody slaughter of thousands of unarmed students by soldiers in Tiananmen Square shows the government's true feelings toward its own people: that of utter disregard for the precious lives it is supposed to serve.

Peter Yifey Yan, a graduate student in electrical engineering at Washington University, is a media representative for the St. Louis Association of Chinese Students and Scholars for Democracy in China.

"There is no routine orderly means for power to be transferred from one generation to another in the People's Republic. There is competition, intrigue, secrecy, and power."

litical status quo at risk. The consequences were virtually predictable. Whether knowingly or not, Deng and his compatriots gambled that they could control the pace and direction of the change they set in motion. They gambled and lost, resorting to a measure consistent with their past: brutal force.

What the United States should do has been the subject of much discussion. There have been calls for economic sanctions, trade cutoffs, and summoning home the ambassador. The response of President Bush has, in the language of diplomacy, been measured, but if the Chinese government continues to hunt down, arrest, and execute leaders from the pro-democracy movement, Congress is likely to enact tougher sanctions. Yet whatever the United States does, the aging conservative regime in China is unlikely to be moved. Faced with an internal challenge, it will simply ignore external opinion and consider illegitimate any comment or interference in its external affairs.

But the regime is aging. Does that give reason for hope? Perhaps, but just perhaps. There is no routine orderly means for power to be transferred from one generation to another in the People's Republic. Smooth transitions are not a tradition. There is competition, intrigue, secrecy, and power. It is entirely possible that Deng's successor will be at least as conservative and averse to change as Deng has shown himself to be. Fifty years from now there may be another student uprising.

In the meantime, we cannot ignore or sever ties with China. We gain nothing if China rejoins the Soviet orbit or if we lose access to China. We should continue to welcome Chinese students and, despite the inevitable difficulties, should encourage Chinese scholarship. For us to act otherwise would be self-defeating. Repressive though it is, China is a huge and significant state. We should do nothing that might slow China's recovery from this most recent great leap backward. But we should be prudent, even cautious. China will not in the foreseeable future become like a Western democracy. Through the past decade, our view of China has been blurred by hope and wishful thinking. June 4 must surely have cleared our vision. ■

A LEGACY OF REPRESSION

In the wake of the Beijing massacre, Washington's China scholars probe the past to explain the present and portend the future

By Cynthia Georges

Professor Robert Hegel first visited China in 1976 as the leader of a delegation of activists in the U.S.-China People's Friendship Association, a sponsoring agency of educational programs. Mao Zedong lay on his deathbed as the Cultural Revolution was drawing to a close. People were searching desperately for a new brand of leadership.

Curious about what the Chinese were feeling, Hegel took to wandering the streets, eavesdropping on conversations that never would have taken place in the presence of a Westerner. In daylight, everyone had avoided him. Foreign contact was risky business, inviting "demerits" from a government-imposed surveillance system enforced by neighborhood watchdogs. The dialogue of that day, says Hegel, concerned "everything under the sun — except for politics."

Ten years later Hegel, then visiting professor at Duke University, returned as resident director of Duke's Study in China program. "I saw quite a change," he recalls. "All people talked about was politics, economic change, the bad old days, and hopes for the future. Everyone was convinced that the Cultural Revolution was over and couldn't happen again because the masses were too strongly against further political movements."

Few people were able to predict the series of events leading up to the Beijing massacre that bloodied China's spring of 1989. Even the demonstrating students could not foresee the treacherous road ahead. Emboldened to take their pleas for reform to the streets, China's youth succumbed to a euphoric spell that overpowered all sense of fear and retribution.

Scholars and China watchers alike agree that we can only speculate on the continuing repercussions of the revolt. Speculate with scenarios based on what little accurate information the Chinese government has allowed us and what vast body of misinformation it propagates. A look to China's past, however, tells us more; the historical context of Chinese political, legal, and social attitudes lends new understanding of a troubled coun-

Cynthia Georges is a St. Louis-based freelance writer and acting managing editor of Washington University Magazine.

try victimized by one of the world's most repressive governments.

Robert Hegel and four other Washington University scholars specializing in the study of China — its legal and political systems, economy, philosophical thought, history, literature, and culture — probe China's past to offer their observations, insights, and theories regarding the recent upheaval and the unsettling consequences in China today.

Blind loyalty

Between 80 and 85 percent of China's population lives in rural areas. Estimates from the Chinese government indicate that half of the people are minimally literate; the remainder, virtually illiterate. A sharp division between city and countryside contributes to the lack of communication felt by the two populations. For these reasons, Hegel does not predict a great change in the country's response to the crisis. "When there is no change in their experience, it's difficult for people to change their ideas," he says. "The lack of education is crippling in China. Many people would have nothing to lose by going back to Mao's system, and they want to do so."

The Chinese people have maintained a traditional blind loyalty to their leadership since the early days of the imperial age when members of the inner court were ordered to support the emperor during periods of political upset. Even those today who stand to gain from further developing the country will fall back on the traditional mindset of accepting what leaders say, offers Hegel, a scholar of Chinese literature.

"The question is not will there be change. There *will* be because China cannot survive in the old mode," counters Stanley Spector, professor emeritus of Chinese. The former director of Washington's International Studies, Spector cites revolutionary developments in communications and transportation systems, coupled with China's influx of American and European business professionals, teachers, and students, as contributing factors to China's increased awareness of Western ideas. "Karl Marx said it beautifully at the time of the Opium Wars," notes Spector. "He said China has been forced open by

British cannon. Like any other mummy that has been hermetically sealed, as soon as it is exposed to the fresh air of the Western world, it will dissolve, turn to dust. The secret is out. Innocence is gone from China. I believe this is the last gasp of an old system. I believe it with all my heart."

In Spector's view, the U.S. government's "wimpish" reaction to the crisis fuels the oppression demonstrated by top-line officials, most of whom emerged primarily from military ranks. Spector has long studied the his-



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torical presence of these ranks. His book *Li Hung-Chang and the Huai Army*, a study of regionalism in 19th-century China, centers on China's modernization as accomplished by militarists. "Designed for military and national security purposes, modernization continues to be motivated primarily by that for which it was originally planned," says Spector. "Only with the growth of modernization came the recent realizations that there could be a better life for the Chinese and that China is a part of a much larger world."

"Saviors" vs. "the enemy"

Was the party leadership, then, displaying a blatant ignorance regarding the nature of economics, and more specifically, the direction of its own modernization campaign, in its brutal crackdown on students and workers alike?

Put simply, in socialist government party takes precedence over economics. "To retreat means the downfall of the People's Republic of China and the restoration of capitalism," admonished President Yang Shangkun, an 82-year-old veteran of the Long March, in a

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"The lack of education is crippling in China. Many people would have nothing to lose by going back to Mao's system, and they want to do so."
— Robert Hegel

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“The secret is out. Innocence is gone from China. I believe this is the last gasp of an old system. I believe it with all my heart.”
— Stanley Spector



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pre-massacre speech to his military commanders. History has illustrated that the Communist Party will go to any lengths — even to killing its own children — to maintain a stronghold on power and to ensure it has no rivals.

A look into traditional Chinese philosophical thought brought Hegel closer to an explanation for the government's severe course of action — one that centers on Mao Zedong's problem-solving approach developed during the anti-Japanese war. Hegel explains:

“All change in society is a product of internal contradictions, opposing forces within an entity. One, by definition, is going to be stronger than the other. The stronger side of the contradiction will ultimately change the contradiction, overpowering the weaker side. When Mao was applying this idea to problems of warfare, he made sure he was on the dominant side. He made sure he overpowered his enemy. His theories of guerilla warfare were extraordinary because he always fought to win. He didn't fight unless he *could* win. This gave his armies a legacy of successes that were an inspiring and major factor in

popular support of the Communist Party.”

This reasoning evolved to concern only the society's primary contradiction, says Hegel. All other political, social, and economic problems in China were brushed aside and either forgotten or labeled back-burner issues. In the case of the most outstanding recent contradiction — those in China who desire political reform and the Party that insists it be the dominant force in political life — all issues regarding economics, international trade, and world opinion faded into the background. To the leadership, these concerns remained secondary. Even the students themselves became infected with the same simplistic approach to problem-solving, says Hegel. “It's the mentality of us versus them; we are the saviors, they are the enemy”

Economy fosters legal system

Induced by Deng Xiaoping's market-oriented reforms, the past decade in China's economy witnessed remarkable growth. The \$14 billion trade relationship between the United States and the People's Republic testified to China's position as one of the fastest growing economies in the world. China's gross national product had mushroomed at more than 10 percent a year, and the potential of its 1.1 billion people — 25 percent of the world's population — was becoming more and more visible.

Embracing this growth, the Chinese government sponsored and encouraged the development of a legal system. The feeling that such a system was necessary to economic development fueled these efforts, as did the people's memory of and hatred for the rampant lawlessness that defined the Cultural Revolution. The government's stated goal was to formalize the country's legal code, replacing *renzhi*, the rule of men, with *fazhi*, the rule of law.

Charles McManis, professor of law, traveled to Chengdu in mid-May to participate in a teacher exchange program with the law department at Sichuan University. His trip, scheduled to end July 8, was cut short by the Communist Party's crackdown. Says McManis, “I came away wondering if the Chinese legal system was rendered somewhat irrelevant by the events.

“From what I understood, martial law was itself illegally declared.”
— Charles McManis



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"I noticed at several points in government propaganda, before and after the massacre, invocations of law in support of the government," he recalls. "But from what I understood, martial law was itself illegally declared. Statements were eerily similar from official to official in support of the announcement of martial law. The most ominous of all was that even the Supreme People's Court (equivalent to the U.S. Supreme Court) issued a statement of support of martial law indicative of a certain lack of judicial independence in a legal system."

A specialist in patent, trademark, and administrative law, McManis says the Chinese have been attempting to develop a patent law system to stimulate their economic growth. They were also in the process of drafting an administrative litigation law — a law designed to give citizens legal recourse against government officials. The final draft of that law, says McManis, was promulgated just weeks before he left for China.

The crackdown dealt China's fledgling legal system a mighty blow. According to Frances Foster-Simons, associate professor of law who joined Washington's faculty last year, the June 4 massacre "reversed more than a decade of progress toward professional, independent creation and enforcement of law. At least temporarily, China's legal system has returned to the dark days of complete subordination to Communist Party dictate."

Major changes have occurred in all elements of the system, says Foster-Simons, an authority on socialist legal systems. "The judiciary has retreated from a consistent pattern of increasing criminal procedural rights and protection to one of pro forma public trial followed by immediate execution. The legislature, which in the immediate wake of the crackdown appeared on the point of voiding the martial laws issued by the Communist Party leadership, now is clearly subordinate to the party. The leading body of the legislature, known as the Standing Committee, postponed a decision on a revolutionary draft law on freedom of the press in favor of intensive study of central party documents and passage of a party-initiated law banning rallies and demonstrations. As for the executive



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wing," asserts Foster-Simons, "its legitimacy appears today to be based on force alone."

Law equals punishment

Although the ancient Chinese developed a sophisticated civil service system, the importance of law waxed and waned with the fate of China's emperors. The official legal system in China prior to 1911 was designed actually to prevent the development of much that we regard as law, says William C. Jones, professor of law. "For instance, the practice of law, as we understand it, was a crime," he offers. The communists attempted to establish a Soviet-style system after they took over the country in 1949, but the effort was eclipsed by Mao Zedong's anti-rightist campaign in the late 1950s. After 1957 there was very little legal instruction available in the country, and few law books were published. Within the following decade, the Cultural Revolution sealed the lid on legal lexicon. The "10-year turmoil" witnessed the condemnation of lawyers and the refrain of a popular Red Guard slogan, "Smash law into smithereens!"

The Chinese possess little experience in dealing with a Western-style legal system, says Jones, the first Fulbright scholar to lecture in law at Wuhan University in 1982. "In traditional Chinese, there are no words that correspond to any European words for law. If you think of the Chinese word that normally translates into law, you think of punishment," he says.

Jones' three trips to the People's Republic, including a two-year stay from 1982-84, were more a source of frustration than one of enlightenment. "The whole legal educational milieu was in a state of disruption and confu-

"The judiciary has retreated from a consistent pattern of increasing criminal procedural rights and protection to one of pro forma public trial followed by immediate execution." — *Frances Foster-Simons*

Preparing for Pacific Partnership

As American business interests continue to rise in Japan, Taiwan, and other East Asian countries, the knowledge of East Asian legal systems becomes increasingly important. An effective partnership, however, requires more than the mastery of statutes and regulatory laws. "A broader understanding of culture and language becomes essential," says William Kirby, dean of University College and chair of Asian Studies. "This is what we offer at Washington University."

Kirby refers to a new program—the joint J.D./M.A. in Law and Asian Studies—inaugurated this year by the Graduate School of Arts and Sciences and the School of Law. The program marks the convergence of Washington's 30-year-strong Asian Studies area and an East Asian specialty in a law school

distinguished for its international component. Course work emphasizes the recent history, languages, and cultures of East Asia and the historical evolution of institutions with which legal specialists will interact. In short, the program prepares the legal expert to deal effectively with our Pacific partners in affairs of trade and negotiation.

"The training of internationally competent lawyers demands both a strong legal education and a strong interdisciplinary education," says Kirby, co-director of the program with law professor William C. Jones. Citing other universities in the nation whose law schools encourage students to pursue two consecutive degrees (one in law, the other in some area of Asian Studies) without any real integration, Kirby claims that Americans are the least prepared educationally and culturally for doing business in East Asia.

On the other hand, societies such as the Japanese work hard to master survival in a foreign environment. Japanese college students attend language-training institutes evenings and weekends to learn English, among other languages and skills, says associate professor of Japanese Tamie Kamiyama. Japanese companies, too, offer language-training to newly hired employees. "In this regard, there has not been the remotest effort made by the American legal community until very recently," remarks Kirby.

"When we talk of culture, we talk of 1,000 years," offers Kamiyama, who teaches in the joint degree program. "As children, we learn to appreciate the cherry blossom. This appreciation becomes a part of daily life. We have long-held traditions that increase our cultural awareness."—C.G.

sion," he recalls. "The libraries were very poorly arranged, and undergraduate students were not permitted into the stacks. Some law school deans had no legal training; the average professor had very little. We were trying to explain to them the case method, which is totally incomprehensible to most Chinese. The cultural differences were so great it was almost a total failure.

"The Chinese don't understand their legal system," he continues. "They're not used to thinking about law in a sociological and anthropological sense. They think of it in rigid terms. Often they think that if you pass a law, that means something. Passing laws is the least of it . . . putting them into effect is what matters. Unless you know how law re-

ally works, you don't know much about a legal system."

Deng's "rule of law"

In view of the recent China crisis, it seems paradoxical that Deng Xiaoping, upon achieving power in 1978, instituted "rule of law" as a critical element in his effort to modernize China. As a result, China claims a rising number of lawyers, law schools, laws and regulations, and judges, most of whom are retired army officers. The first statutes constituting the new legal system were passed in July 1979, and since then, hundreds more covering everything from murder to trademark infringement have been issued. The number of Chinese lawyers has grown from 2,000 in 1980 to 25,000 today. According to a report issued earlier this year, some 70 legal publications are currently in circulation.

To what extent such resources and others will be available to Western scholars, however, now remains in question. The flood of published materials available from China in the past five years may dwindle to a trickling stream of papers and articles that espouse more the party line on issues than analysis of facts by reference to legal norms. "We'll have to resort primarily to book-learning again," says Foster-Simons, "and even that will be a problem."

"In traditional Chinese, there are no words that correspond to any European words for law. If you think of the Chinese word that normally translates into law, you think of punishment."

— William C. Jones



Herb Weisman



A N N U A L
R E P O R T
1988 – 1989

Remarks of the Chairman

From the perspective of this chairman of the Board of Trustees, the 1988-89 academic year has been a good one. Washington University remains among the very few first-rank teaching and research institutions that have worldwide impact.

Many faculty members continue to be recognized by their peers and by the public as leaders in disciplines as diverse as poetry, space sciences, genetics, Western history, and Islamic studies. Our students continue to compete successfully in tests of their academic skills with their peers from other outstanding institutions. The University is respected by the world media as a source of authoritative information on issues affecting the lives of people all over the globe. The University's alumni are leaders in education, business, science, the arts, and the professions, and may be found at the head of such organizations as the Council on Foreign Relations, the World Health Organization, and the Central Intelligence Agency.

The path to such important service to the world has not always been easy, but the University's progress has been steady and determined, particularly in the past decade. The students, faculty, and administration are in the vanguard. They are backed by a loyal and dedicated community of alumni and friends, who have matched commitment with generosity to keep Washington University's advancement on course. At the center of these efforts is a concerned and deeply involved Board of Trustees dedicated to helping the University achieve its goals now and in the future. With advice and recommendations from students, faculty, alumni, administrators, and especially from the National Councils for the schools and major units, the Board's actions and deliberations focus on how it can be of assistance in building the greatest Washington University possible. I am grateful for those who will not sway from this course.

The makeup of the Board of Trustees continues to evolve. Two new members were elected last fall and two former regular-term members were re-elected. At the recent spring meeting, one new trustee was named and three were re-elected to new terms. Another new trustee will fill a newly created position on the Board.

Joining the Board for the first time this year were Andrew B. Craig III, president and chief executive officer of Boatmen's Bancshares, Inc., St. Louis; Robert C. Drews, M.D., professor of clinical ophthalmology at the School of Medicine and 1988 Distinguished Alumni Award recipient, St. Louis; and Sam Fox, chairman and chief executive officer of Harbour Group Ltd., St. Louis, also a recent winner of the Distinguished Alumni Award.

Rejoining the Board were James Lee Johnson, Jr., vice president of Stifel, Nicolaus & Co., St. Louis; Donald E. Lasater, chairman of the board, Mercantile Bancorporation, Inc., St. Louis; John F. McDonnell, chairman and chief executive officer, McDonnell Douglas Corporation, St. Louis; Mary Dell Pritzlaff, Phoenix, Arizona, civic and charitable leader; and alumnus William H. Webster, director of Central Intelligence, Washington, D.C.

Washington University's relationships with its home community are a priority of the University's Board. Appointed as trustee and full-time vice chairman to coordinate those relationships is Clarence C. Barksdale. Formerly chairman and chief executive officer of Centerre Bancorporation, Inc., he retired June 30 as director and vice chairman of Boatmen's Bancshares, Inc., which acquired Centerre last winter. Mr. Barksdale is a longtime civic leader in St. Louis. His responsibilities as vice chairman will include representing the University and the Board in certain civic activities and helping the University work more effectively with the community and community organizations. He will serve on the Development Committee, and will advise the Chancellor on corporate and state relations. Mr. Barksdale is a former trustee of Brown University, of



Lee M. Liberman

which he is a graduate, and a trustee emeritus of St. Louis University. Besides his corporate directorships, he holds or has held leadership posts in a number of other cultural, educational, and charitable organizations. He attended Washington University School of Law, Stonier Graduate School of Banking at Rutgers University, and Columbia University Graduate School of Business.

Early in this year, the Board, the University, and the entire community lost a leader and great friend with the death of Life Trustee George H. Capps, president of Capitol Coal and Coke Company, and former vice chairman and chairman of the Board. Mr. Capps was general chairman of the highly successful ALLIANCE FOR WASHINGTON UNIVERSITY campaign completed in December 1987, the crowning achievement of his leadership and many contributions in the University's fundraising successes since the 1970s. His wise counsel and deep commitment to the University's work will be greatly missed. Our advancement efforts today and in the foreseeable future will build on the firm foundation he laid.

Lee M. Liberman
Chairman
Board of Trustees

Comments by the Chancellor

Many of the events of the 1988-89 academic year may be seen as the successful outcomes of many decades of striving for excellence. One unusual event brought national focus on Washington University. In the first campus visit of his administration, President George Bush spoke to a University audience on voluntarism, commending especially the generous community service given by our students, and saluting our tradition of academic excellence. This occasion, which lasted only a few hours and required but a few days' preparation, caused a swelling of pride in the audience in the Field House that will not quickly diminish. Reverberations of the historic visit in February will be felt within the University for years.

Studies of Washington University's mission, resources, and potential undertaken a decade ago and the recommendations made for our future continue to guide our development. Arts and Sciences has set new records for the number of highly qualified students in the entering freshman class. The dedication last autumn of the John M. Olin School of Business moved us closer to the goals set in 1981 by the task force for the business school. The alumni and friends of the school are rallying to provide the support needed to claim the \$15 million challenge grant made by the John M. Olin Foundation. Ground was broken and construction begun on Jolley Hall, the cornerstone of the Five-Year Plan for strengthening the School of Engineering and Applied Science. Progress is on target for meeting the objectives of this special campaign, which received a major boost from a \$750,000 challenge grant from the Kresge Foundation toward completing the construction of Jolley Hall. Construction of the new medical library at the School of Medicine is nearing completion. The Plant Growth Facility in the Department of Biology, dedicated in April 1988, was the impetus for new research centers established by major grants received last year.

While it remains a very subjective survey of higher education, the fourth

annual *U.S. News and World Report* study of America's best colleges rated Washington University among the top five of 204 national universities in faculty quality, along with Caltech, Johns Hopkins, the University of Chicago, and Yale.

Further evidence of the faculty's achievements was seen in the recognition accorded them by the leading organizations of their peers. An Arts and Sciences faculty member was selected to receive a prestigious MacArthur Fellowship: Cornell H. Fleischer, professor of history and director of the Center for the Study of Islamic Societies and Civilizations, will use the grant to further his studies of Islamic culture. Howard Nemerov, Edward Mallinckrodt Distinguished University Professor of English, was appointed to a second one-year term as Poet Laureate of the United States. Many other faculty received important national and international honors and awards during the year.

Dale Purves, professor of neurobiology and co-director of the Senator Jacob Javits Center of Excellence in Neuroscience at the School of Medicine, was elected to the National Academy of Sciences. Two faculty members—Harvey R. Colten, Harriet B. Spoehrer Professor and head of the Department of Pediatrics, and C. Robert Cloninger, professor of psychiatry and genetics and head of the Department of Psychiatry—were elected to the prestigious Institute of Medicine of the National Academy of Sciences. Two other members of the medical faculty—William H. Daughaday, Irene and Michael Karl Professor of Medicine Emeritus, and Emil R. Unanue, Edward Mallinckrodt Professor and head of the Department of Pathology—were elected fellows of the American Academy of Arts and Sciences. Washington University now has 22 members in the National Academy of Sciences, 16 in the Institute of Medicine, and 19 in the American Academy of Arts and Sciences.

The academic qualifications of entering students continue to rise; the freshman class entering in 1989 is, on paper, the most able group yet to



William H. Danforth

attend Washington University. Despite their potential, they will need to work hard to surpass the achievements of many of their predecessors. Three 1989 graduates were awarded Mellon Fellowships for graduate study in the humanities. Another was selected to receive a prestigious Marshall Scholarship for graduate study in Britain. A sophomore was one of 92 national winners of a Harry S Truman Scholarship. A team of students took top honors in the Mathematical Contest in Modelling for the third time in the competition's five-year history. Other recognition was given student achievements in legal skills competitions, publication of the student newspaper, playwriting, athletic endeavors, and many other activities.

Some academic news was more sobering. One year ago in this space, I wrote of the successful conclusion of the ALLIANCE FOR WASHINGTON UNIVERSITY campaign in December 1987: "These new resources have not made life easier, but rather more challenging. They in no way relieve us from our obligations to strive for excellence, to set priorities, to practice thrift and frugality. . . . Even such a successful campaign cannot spare us from making difficult choices or from the constant searching for the support needed to make the most of our opportunities."

In the context of what has happened at Washington University during the 1988-89 academic year, these thoughts are even more relevant now. Two occurrences, at least, have resulted from the difficult choices I mentioned. I discussed the action approved by the Board of Trustees to phase out the School of Dental Medicine and the Faculty of Arts and Sciences' decision to close the Department of Sociology in a letter sent to the entire Washington University community in June. Each of these decisions followed a careful assessment of the options and the impact on the rest of the University, in terms both of the academic mission and of the allocation of resources. In each case, closing a program—the hard choice—was the appropriate response to the challenges before us. In the long term, these decisions will strengthen Washington University.

Several key administrative positions were filled during the year. Mentioned briefly in last year's report was the appointment in July 1988 of Martin H. Israel, professor of physics and acting dean since 1987, as dean of the Faculty of Arts and Sciences. Edward S. Macias, professor of chemistry and chairman of the Department of Chemistry, and associate provost for science and technology, was appointed provost in October, succeeding Ralph E. Morrow, who had returned from retirement to serve as acting provost following the resignation of W. Maxwell Cowan. Our national search for a dean of admissions has resulted in the appointment of Charles S. Nolan, director of undergraduate admissions at Boston College, as admissions dean and assistant provost, effective August 1. William A. Peck, John E. and Adaline Simon Professor of Medicine and vice chairman of the Department of Medicine, was appointed to the dual position of vice chancellor for medical affairs and dean of the School of Medicine. He succeeds Samuel B. Guze, retired after 18 years as vice chancellor, and M. Kenton King, retiring on October 1, 1989, after 25 years as dean. These two individuals have presided over a golden era for the School of Medicine. Shirley K. Baker has been appointed dean of university libraries, effective August 1. She was associate director for public services at MIT. Burton Wheeler, interim dean, continues as professor of English and religious studies. Joe Deal has been appointed dean of the School of Fine

Arts, beginning this fall. Professor of art and associate dean of the College of Humanities and Social Sciences at the University of California, Riverside, Deal succeeds James W. Davis, appointed acting dean in 1988. Richard Jay Smith, professor and associate dean of the School of Dental Medicine, has been appointed dean, succeeding David A. Bensinger, who has retired. Smith will serve as dean while the School's remaining students complete their training.

Those individuals who have held important positions while searches for permanent occupants were under way have not been mere caretakers. They have exercised sound leadership and sustained the momentum in their areas, often at great personal costs in time and effort. Their newly appointed successors, the entire University community, and I owe them a debt of gratitude.

I should like to give special recognition to three groups of individuals who stand behind Washington University's achievements. First, the University's Board of Trustees is as farsighted and supportive as any university could hope for. They act surely and generously to enhance and preserve the University's resources and to advance its mission. Second, the members of the National Councils, who are advising the schools and other units, have already demonstrated deep personal interest and exceptional commitment to their responsibilities. Finally, the alumni of Washington University's colleges and schools are our bulwark. Without them, we could meet none of the challenges we face. Without our wonderful supporting community, who provide counsel, ideas, resources, and effort, Washington University could claim no progress.

William H. Danforth
Chancellor

Selected Highlights of 1988-89

Of the many visits during the year by distinguished world figures, the first visit to Washington University by a President in office was a homecoming of sorts: President George Bush's maternal grandfather, George Herbert Walker, was a graduate of the University's School of Law. William E. Simon, president of the John M. Olin

Foundation and former Secretary of the Treasury, was the keynote speaker at the October 14 dedication of the John M. Olin School of Business. The two-day celebration honored the late John M. Olin, longtime University trustee and national business leader.

The 1988 centennial observances of two modern literary giants occasioned two conferences that gained widespread attention. "T.S. Eliot: A Centennial Appraisal" celebrated the St. Louis-born poet-playwright and grandson of the University's founder. "Eugene O'Neill: Autobiography and Art" also attracted scholars and literary figures from throughout the English-speaking world. Another major conference dealt with the pressing issues of affordable quality health care. "Cost Containment and the Quality of Care" was keynoted by George Will, Pulitzer Prize-winning columnist and ABC television news commentator.

Additional Faculty Honors

Gerald L. Early, assistant professor of English and Afro-American studies, received two national writing awards: a \$25,000 Whiting Writer's Award from the New York-based Mrs. Giles Whiting Foundation, and a \$5,000 General Electric Foundation Award for Younger Writers. Paul Michael Lützel, professor of German and comparative literature, received the Cross of Merit, West Germany's highest honor for cultural and societal contributions. Maynard V. Olson, professor of genetics at the School of Medicine, has been chosen as one of 12 members of the National Institutes of Health's Program Advisory Committee on the Human Genome; he is associate director of the University's Center for Genetics in Medicine. Charles R. McManis, professor of law, was elected to the American Law Institute; the University now has six elected members and one *ex officio* member in the 2,000-member institute. Kenneth L. Jerina, professor of mechanical engineering, and Edward L. Spitznagel, Jr., professor of mathematics, received 1989 Burlington Northern Foundation faculty achievement awards. In addition to these honors, many other faculty members received professional and community recognition.

Student Achievements

Three students awarded 1989 Mellon Fellowships in the Humanities for graduate study—1989 graduates David W. Beisecker, Michael O. Weiss, and

John H. Pollack—were among 126 North American winners of the two-year awards. Washington University was among the top 10 in the country in the number of Mellon Fellowship winners. Another 1989 graduate, Philip N. Sabes, was one of 30 American students selected for a Marshall Scholarship for graduate study in Britain. Sophomore Robert Skinner was one of 92 national winners of a Harry S Truman Scholarship for his last two years of undergraduate study and two years of graduate work. Members of the Washington University team, which shared top honors in the Mathematical Contest in Modelling with Caltech and Cal Poly at San Luis Obispo, were Thomas Fields, David Krasnow, and Kevin Ruland. Students in the School of Law continued their vigorous participation in a full range of skills competitions, winning regional honors and receiving recognition in the National Trial Competition quarterfinals and the national Frederick Douglass Moot Court Competition. The University's student-athletes continue to earn recognition. Among many honored during the past year was Lori Nishikawa, selected by the American Volleyball Coaches Association (AVCA) and Reebok as 1988 Player of the Year for Division III. Other honors and recognitions for our students included state and national awards for *Student Life*, and participation in the national College Bowl competition, the ESPN cable network's Superbowl of Sports Trivia, and the Methanol Marathon, a road rally using cars converted by students to run on methanol.

Voluntary Support

The generous support of alumni and friends for the work of Washington University continued at a high pace. Three major commitments to help meet the \$15 million John M. Olin Challenge were announced in October: \$3.4 million from Emerson Electric Co.; \$1 million from the May Department Stores Company; and \$1 million from the late Hubert C. Moog, and his wife, Dorothy. Two other commitments will help meet the Olin Challenge. Alumnus Robin E. Hernreich made a \$1 million commitment to establish an endowed professorship in international economics that will jointly benefit the business school and the Faculty of Arts and Sciences. Boatmen's Bancshares, Inc., has given \$1 million to endow a professorship in banking and finance at the Olin School, in honor of the

company's retiring chairman, Donald N. Brandin, and his service to Washington University as trustee. The School of Engineering held groundbreaking ceremonies last August for Harold D. Jolley Hall, the keystone of its \$21 million, Five-Year plan for strengthening the School; the School's campaign to complete the funding for expansion of its graduate and research programs is well under way. Two other major commitments benefit activities in the Faculty of Arts and Sciences. The Lynde and Harry Bradley Foundation made a grant of \$515,000 to support the 1989 and 1990 Institutes for the History of Freedom, sponsored by the Center for the History of Freedom. The Mitsubishi Kasei Corporation of Tokyo announced a gift of \$500,000 for research space for the Department of Biology in a new science building being planned; the gift is the company's largest contribution in the U.S.

Sponsored Research

Faculty continued to have success in gaining research support from federal agencies. The National Science Foundation (NSF) awarded two faculty members major grants to establish research centers. A \$1.8 million grant to Jacob Schaefer to establish the National Instrumentation Facility for Nuclear Magnetic Resonance (NMR) of Biological Solids makes Washington University the world's premier center for high-resolution NMR of biological solids. Schaefer also received a \$422,000 grant from the National Institutes of Health (NIH) for similar research. Roy Curtiss III, George William and Irene Koechig Professor of Biology and department chair, received a \$460,000 NSF grant to establish and equip a multidisciplinary Center for Resource Biotechnology, one of 20 such centers across the nation. Curtiss and two members of the medical faculty have received MERIT status from NIH to extend funding of their research for a five-year period. Sondra Schlesinger, professor of microbiology and immunology, will receive \$800,000 for her research on RNA viruses. Marc R. Hammerman, associate professor of medicine, will receive \$832,000 for his research on kidney growth and development. Curtiss, who is also professor of cellular and molecular biology at the School of Dental Medicine, will receive \$715,000 for his research involving vaccines for dental disease. Two other faculty received major grants from NIH: Gustav

Schonfeld, Kountz Professor of Medicine and director of the Lipid Research Center at the School of Medicine, has been awarded \$1.1 million to study the causes of atherosclerosis; and Philip A. Osoby, associate professor of physiology at the School of Dental Medicine, has been awarded \$995,000 for his research on bone loss.

The state of Missouri has made a \$500,000 grant to establish the Center for Plant Science and Biotechnology at the University, a collaborative effort with the Missouri Botanical Garden and the University of Missouri at Columbia. Roger Beachy, professor of biology, is director of the center.

Two major grants by private foundations will strengthen programs in the sciences. The W.M. Keck Foundation of Los Angeles will provide \$900,000 for research fellowships in the School of Medicine and \$300,000 for equipment for the remote sensing laboratory in the Department of Earth and Planetary Sciences. The University will also share in a \$1.4 million grant from the Pew Charitable Trusts, Philadelphia, to the Mid-States Science and Mathematics Consortium to bolster undergraduate education in science and mathematics and retain students and faculty in the sciences.

Administrative Changes

In addition to those mentioned in the "Comments by the Chancellor," several other administrative appointments were made. Gerhild Scholz Williams, professor of German and comparative literature and chairman of the Department of Germanic Languages and Literatures, has been named associate provost. Joseph D. Ketner, acting director of the Gallery of Art since 1988 and curator and registrar since 1982, has been appointed director. John Berg, special assistant to the chancellor, has been appointed associate vice chancellor for finance. And while University College Dean William Kirby is on a one-year leave of absence as a visiting professor at Harvard, Ronald C. Freiwald, associate professor of mathematics and director of the Summer School, has been named acting dean.

Faculty of Arts and Sciences

The 1988-89 academic year was again marked by significant achievements of our students and faculty. It was also a year for taking stock and planning for the future of Arts and Sciences.

Freshman Admissions

Admissions to the class that entered the College in the fall of 1988 were more selective than ever before. With so many qualified applicants, we have had an increasingly difficult task of selecting among very able young people. The result was a freshman class this year that had better credentials than any in the past; and reports from faculty indicate that in the classroom the freshmen have lived up to their high promise.

The qualifications of the students in this year's applicant pool seem even higher than those of last year. As a result we anticipate another class this fall of about 725 outstanding young people.

Student Awards

Again this year graduating seniors earned a number of national awards, including Fulbright and National Science Foundation fellowships for graduate work, and graduate students earned awards for graduate research from NASA and from the National Institutes of Health. Of particular note were graduating seniors David Beisecker (Philosophy), John Pollack (English and Comparative Literature), and Michael Weiss (English Literature), who won three of the 126 Mellon Fellowships awarded nationally to outstanding students who hold exceptional promise for becoming college professors in the humanities during the next decade.

Teaching

Central to the role of any great university is teaching. This spring an *ad hoc* faculty committee on undergraduate education completed a year-long, in-depth study of teaching in the College of Arts and Sciences. After extensive meetings with students, department chairs, and other faculty, the committee found strong evidence of excellence in teaching throughout

the College, and they also made a number of recommendations for improvement that we will be implementing during the next year. Among their recommendations are increased recognition of excellent teachers, increased orientation and training for new faculty and teaching assistants, further improvements in physical facilities, and wider recognition by department chairs of the need for systematic evaluation of teaching and of assistance to instructors in improving their own classroom performance.

Excellence in teaching in Arts and Sciences was again recognized in several ways. At Founders Day the anonymous committee of alumni recognized Professor Richard Davis (History). The Council of Students of Arts and Sciences presented its outstanding teaching awards to Professors Jean Ensminger (Anthropology), Gerald Izenberg (History), Stamos Metzidakis (French), and James Miller (Physics). One of the two recipients of the Burlington-Northern teaching award was Professor Ed Spitznagel (Mathematics), who has over the last several years transformed the teaching of mathematics by making computers an integral part of the curriculum of that department.

Two major external grants were awarded this year that support different aspects of science education. A consortium composed of Washington University, the University of Chicago, and 10 midwestern four-year colleges received a \$1.4 million grant from the Pew Charitable Trusts to improve undergraduate science education. The U.S. Department of Education awarded three-year grants totaling \$1.3 million to two of our departments, Mathematics and Physics, under a new program entitled "Graduate Assistance in Areas of National Need."

Faculty Honors

Cornell Fleisher, professor of history and director of our Center for the Study of Islamic Societies and Civilizations, was selected as one of 31 individuals nationwide, from all areas of creative and scholarly endeavors, to receive a five-year fellowship from the John D.



Martin H. Israel

and Catherine T. MacArthur Foundation. These so-called "genius" awards are given as the result of an anonymous nomination and selection process.

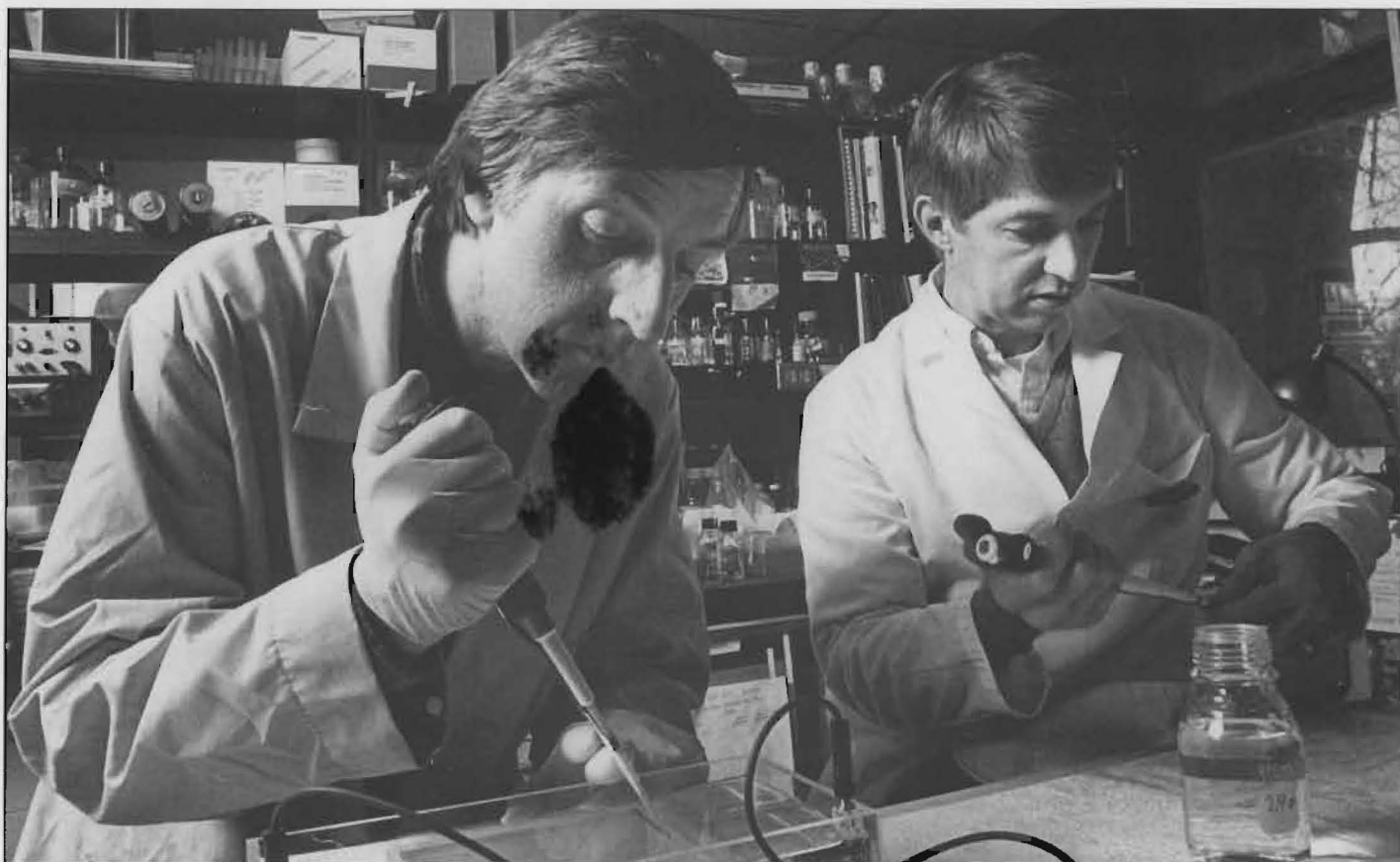
Peter Raven, Engelmann Professor of Botany and director of the Missouri Botanical Garden, and a previous recipient of the MacArthur Fellowship, was elected this summer to the American Philosophical Society, one of the nation's most prestigious recognitions for achievement in sciences, letters, and the arts.

Gerald Early, associate professor of English and of African and Afro-American Studies, received two awards for his writing. He was one of 10 recipients nationwide of the \$25,000 Whiting Writer's Award of the Mrs. Giles Whiting Foundation of New York, for outstanding writing accomplishments; and he was one of six recipients of the General Electric Foundation Awards for Younger Writers for literary essays published in *Cottonwood*.

We honored one of our own by appointing Naomi Lebowitz, professor of English, to the second Hortense and Tobias Lewin Distinguished Professorship in the Humanities.

Major Grants

We received two of the 20 major awards from the National Science Foundation for establishment of biological research facilities centers.



Roger Beachy, Ph.D. (right), director of the Center for Plant Science and Biotechnology, working with French scientist Claude Fauquet on techniques to improve plants through genetic engineering.

One grant to Jacob Schaefer, professor of chemistry, establishes a National Instrumentation Facility for Nuclear Magnetic Resonance in Biological Sciences. The other is to Roy Curtiss III, Frieberg Professor of Biology, for a multidisciplinary Center for Resource Biotechnology.

The state of Missouri made a half-million dollar grant for establishment of a new Center for Plant Science and Biotechnology under the direction of Roger Beachy, professor of biology.

The Bradley Foundation awarded a half-million dollar grant to support a long-range project established by Jack Hexter, Olin Professor of the History of Freedom, to produce a multi-volume history of modern freedom.

International Conferences

In the fall we hosted two major international conferences celebrating the centenaries of the births of two great writers, T.S. Eliot and Eugene O'Neill. The conferences included scholarly papers on and productions by the Performing Arts Department—Eliot's *Murder in the Cathedral*, performed in Graham Chapel, and O'Neill's *Desire Under the Elms*.

Capital Gifts

Major capital gifts for physical improvements and for endowment are essential to the continued improvement of Arts and Sciences. Mitsubishi Kasei Corp. donated a half million dollars that will be applied to the construction of the new natural sciences building, for which we plan to break ground in spring 1990. This spring Robin Hernreich, a 1967 graduate, announced a million dollar endowment gift to establish a chair for a joint professorship in the economics department of Arts and Sciences and in the John M. Olin School of Business.

Planning

A year-long study by myself and the faculty Academic Planning Committee reviewed academic areas of strengths and weaknesses in Arts and Sciences and began to set out objectives and specific plans. In the near-term, the overall size of our faculty (which already has one of the lowest student/faculty ratios of any comparable university) will not grow significantly, while several departments have strong reasons for adding faculty. This means

that we have to make conscious choices and be willing not to do quite so many things, but do what we do very well. The planning result that received the most attention this spring was the decision to close the Department of Sociology at the end of the 1990-91 academic year, permitting current sociology majors to complete their required courses, and current Ph.D. students in the department to complete their programs. Some sociology courses will continue in other departments, but there will not be a sociology major. We are committed to maintaining and developing further excellence in all three major areas of the Arts and Sciences—humanities, social sciences, and natural sciences. We are convinced that the long-run result of this decision, and the planning in general, will be to strengthen the liberal education we offer our students and the scholarly standing of our faculty.

Martin H. Israel

Dean
Faculty of Arts and Sciences

School of Architecture

For the first time during a fall semester, a final review of an architecture and urban design studio utilized computer images projected on screens instead of a large-scale model on the floor. This was the result of our improved computer facilities, which were formally dedicated on November 7, 1988.

This is a major improvement of Givens Hall, and it is already having far-reaching effects on the educational mission of the School. It also has focused our attention on the importance and necessity of improvements in our physical plant. As pressure for admission from highly qualified students continues to be very strong, our future planning must also be directed toward efforts to improve and expand our facilities with particular focus on quality.

The rising cost of education, our dependence on tuition for a high percentage of our income, and our ability to provide financial aid continue to be among our major concerns. This year we were very pleased to award our first five Missouri architecture scholarships, and we anticipate 10 such scholarships next year.

The national convention of the American Institute of Architects took place in St. Louis in May and provided contacts among students, faculty, and colleagues in the architectural profession. We hosted a reception for the national AIA board and experienced a rewarding exchange of views on education. Also on the occasion, an alumni/alumnae breakfast attracted an unusually high attendance of more than 100. The School was very pleased to prepare and distribute a new Alumni Directory to commemorate the event.

Students

The 1989 freshman class will be strong in numbers as well as in academic quality. A strong group of graduate students is also entering, and we have numerous requests from students in other divisions of the University to attend architecture classes.

Enrollment in Fall 1988 included 216 undergraduate and 101 graduate students. Of these, 34 percent were

female, 10 percent were minority students, 11 percent were international students, and 14 percent were from Missouri.

The 1989-90 academic year will be the first when all undergraduate classes have a Fitzgibbon Scholarship recipient. Freshman Shana Kochavi was selected for a Fitzgibbon Scholarship for 1989-90, and sophomore Dale Riedl, junior Suzanna Takayama, and senior David Asofsky will be returning recipients of this coveted honor.

This year, the faculty voted to award the Alpha Rho Chi Medal to James Arthur Riddle; the American Institute of Architects Medal to Richard Eric Nelson; Certificate of Merit to Dante L. Domenella; School of Architecture Faculty Award to Outstanding Undergraduate to Angelyn Anderson Chandler; Runner-Up to David James Tidey; Association of Women in Architecture and Allied Arts to Carlene Nolan-Pederson; and the Frederick Widmann Prize in Architecture to John T. Hoal and Peter Gerard Wolff.

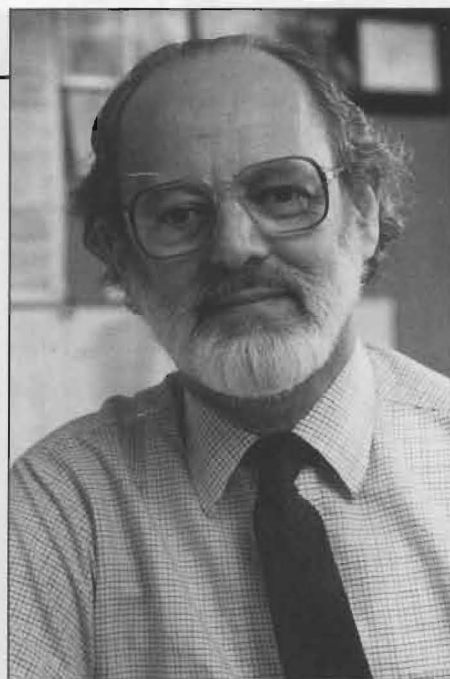
The School received more than 100 applications for the 48 available positions in the 1989 Architecture Discovery Program. The selected high school juniors came from 24 states and Puerto Rico. Illinois was the best represented with five, and except for Puerto Rico, the most distant participants were three applicants from California and one from Oregon. Associate Professor Iain Fraser organized and directed the program with the help of four of our recent graduates: Heidi Eagleton, GA '86, Paul Fendler, GA '86, Jim Riddle, GA '89, and John Hoal, GA '89.

Faculty

James R. Harris, associate professor, associate dean, and coordinator of Introductory Design years, was granted tenure.

Iain Fraser, associate professor, and Rod Henmi, affiliate assistant professor, presented a paper at the West Regional Conference of the Association of Collegiate Schools of Architecture at California State Polytechnic University, Pomona.

Lorens Holm, assistant professor, exhibited his low-relief plaster panels,



Constantine E. Michaelides

"Apocalyptic Visions," at Givens Hall in September.

Adrian Luchini, visiting assistant professor, exhibited prints and bas-reliefs at the Atrium Gallery in St. Louis and lectured at the Smithsonian Institution.

Brian McLaren, visiting assistant professor, presented two papers at the annual meeting of the Association of Collegiate Schools of Architecture in Chicago. One of the papers is to be published in *Reflections* 7, a journal of the School of Architecture at the University of Illinois at Urbana-Champaign.

Affiliate Assistant Professor Gregory Palermo was elected Fellow of the American Institute of Architects.

Udo Kultermann, Ph.D., the Ruth and Norman Moore Professor of Architecture, has learned that his book, *Contemporary Architecture in Eastern Europe*, published in its German edition in Cologne in 1985, will be translated into Russian in Moscow. The book is the first comprehensive analysis of contemporary architecture in Eastern Europe from a Western perspective.

Professor Kultermann also lectured at the Goethe Institute of Chicago and completed a comprehensive article, "Southeast Asian Architecture," for the *Encyclopedia of Architecture: Design, Engineering and Construction*, to be published by John Wiley and Sons. Kultermann's manuscript deals with



Associate Professor Iain Fraser (left) directs the annual Architecture Discovery Program.

Hong Kong, Indonesia, Singapore, and Thailand.

William Bricken, visiting professor of architecture, won the first prize in the national competition for the Clemson University Performing Arts Center. Assisting Bricken was a team of recent Washington University alumni including Joe Brin, GA '87, Dan Drabick, GA '89, Amy Munsat, GA '87, Eric Red, AR '86, and J. Steven Ward, AR '85.

As a result of diligent work by a Faculty Search Committee, the School will be able to welcome a new faculty member for 1989-90. Eleni Bastea is completing her Ph.D. in architectural history at the Department of Architecture, College of Environmental Design, University of California, Berkeley. She had completed her M.Arch. degree at the same institution and received a Bachelor of Arts degree from Bryn Mawr College. Her presence will enhance the School's strength in the area of history and theory of architectural design.

Alumni/Alumnae

The Annual Fund has again posted strong results, with alumni donors increasing 4 percent and actual dollar support from alumni increasing 18 percent. Ten new members joined the Eliot Society, and 81 joined the Century Club. Total Annual Fund gifts will exceed \$100,000 for the fifth consecutive year. Alumni participation in the Annual Fund continues to grow, and support for the Scholarship Program remains high with four new sponsors this year.

Our third Alumni Directory, the first in 14 years, was published and distributed to more than 2,000 alumni. We hope that this directory will encourage and enhance communication among alumnae and alumni.

Other Events

The National Council of the School of Architecture met twice during the year under the chairmanship of Warren M.

Shapleigh. Agendas for the National Council included an overview of the educational mission and current status of the School; presentations from faculty members on their teaching, research, and creative activities; presentations from students about their outlook, commitments, and expectations; and discussion of the School's reserve budget. Discussions have also included future plans and agendas for the Council as well as the creation of an internship development program.

I am personally thankful to all who have contributed to the intellectual and creative excitement in the School this year, and I am looking forward to a challenging and promising future.

Constantine E. Michaelides, FAIA

Dean
School of Architecture

John M. Olin School of Business

The John M. Olin School of Business is steadily progressing toward its goal of becoming one of the best business schools in the nation. Bearing the name of John M. Olin has drawn national attention, and we have committed ourselves to the achievement of ambitious goals. Between now and 1992, we are working to attain the most highly qualified undergraduate student body in business in America and to raise the qualifications of our MBAs comfortably within the range of the top programs; to strengthen our PhD program; to further strengthen our faculty in the core business areas; to expand further in executive education; to invest further in research and development; and to establish two new centers—one in the intersection of business management with law and economics, and another, a management center to enrich the education of our BSBA and MBAs.

Progress in the Student Body

Applications to the PhD program increased both in quality and quantity, with 52 applications for admission. Those enrolling have an average GMAT score of 650.

Eighty percent of admitted undergraduates are in the top 10 percent of their high school classes, and 97 percent are in the top 20 percent. The average SAT score is 1,200.

The 145 students in the entering MBA class have a college grade point average of 3.3 and an average GMAT score of 602. Undergraduate institutions represented include Stanford, Boston University, Tufts, UCLA, Duke, and others of similar high quality.

Almost 1,400 MBA applications were mailed to foreign addresses. Students from Australia, Colombia, England, France, Greece, India, Indonesia, Israel, Japan, Korea, Malaysia, Taiwan, and Turkey were admitted.

Placement of our 1989 graduates was well ahead of last year, with average starting salaries rising about 7 percent.

Progress in the Faculty

The School has a large number of young, untenured faculty members requiring the guidance and mentoring

of the senior faculty. This, coupled with the retirement of several core faculty members and the demands of the doctoral program and institutional service, makes it important that we augment our senior ranks.

Philip H. Dybvig has joined the School as the John E. Simon Professor of Finance. In Fall 1989 we welcomed to the faculty Christopher G. Lamoureux, associate professor of finance; Kerry E. Back, visiting associate professor of finance; Marcia Armstrong, Paul R. Messinger, and Byong-Duk Rhee, assistant professors of marketing; Dale J. Poirier, visiting professor of econometrics; Russell Roberts, visiting associate professor of business economics; Carol Frost, assistant professor of accounting; Chandra Kanodia, visiting associate professor of accounting; Julie Withers, visiting assistant professor of economics; and Laurence H. Meyer, who holds a joint appointment as professor of economics in the School and the economics department.

Faculty achievements include a grant awarded to Nicholas Dopuch, Hubert C. and Dorothy R. Moog Professor of Accounting, and Ronald R. King, assistant professor of accounting, by the Peat Marwick Foundation in support of their joint research project in auditing. The Foundation also selected King for its Research Fellowship Program and Gregory Waymire, associate professor of accounting, for its Faculty Fellow Program.

Morton P. K. Pincus was promoted to associate professor of accounting, while Scott Davis and Pamela H. Pickard, both assistant professors of marketing, were awarded the PhD from Stanford and the University of Texas at Dallas, respectively. Davis and Don L. Coursey, associate professor of business economics, were honored by the Interfraternity Council for their teaching excellence. Olin students selected the following individuals as the year's best teachers: Don L. Coursey; Dean H. Kropp, Dan Broida Professor of Operations and Manufacturing Management; Gary Miller, Reuben C. Taylor, Jr., and Anne Carpenter Taylor Professor of Political Economy; Powell Niland, professor of management; Joel Prakken, adjunct



Robert L. Virgil

assistant professor of finance; and Armand Stalnaker, professor of management.

Powell Niland retired at the end of fiscal 1989. Niland taught almost every MBA in the School's history since joining the faculty in 1957.

Special Centers

Two new centers that will distinguish the John M. Olin School of Business are the Center in Business, Law, and Economics and the Management Center.

The CBLE will focus, through research and teaching, on how law, economics, and politics converge to affect the firm, and will be an umbrella for a wide range of activities. Faculty members will have their primary appointments in the various fields and areas of the School, while the CBLE will be interdisciplinary, involving faculty from law, economics, political science, political economy, philosophy, and other units of the University.

Some of the scholarly activities planned for the CBLE include sponsoring a continuing education workshop, maintaining a working paper series, and hosting major academic conferences; providing fellowship support to PhD candidates who are interested in business, law, and economics; providing resources for faculty research and related scholarly activities on a competitive basis; and developing course offerings in business and law.

The CBLE will have an advisory board of five or six, drawn from directors of prominent law and economics programs, and corporate attorneys and counsels. This board will offer advice, interact with students and faculty, be a resource for the director, and help to enhance the CBLE's visibility.

The first critical step of finding a director has been taken, and 88 scholars have been nominated.

The Management Center (MC) will provide opportunities for MBA and BSBA students to study management concepts which, because of their dynamic nature, are difficult to incorporate into the traditional classroom. Initially the MC will focus on entrepreneurship and international business, and will offer mini-courses, guest lectures, seminars, and other curricular enhancements in these areas. The MC will help to internationalize the School's curriculum.

The John M. Olin Challenge

Our objectives cannot be met on tuition income alone. The financial needs of the best business schools tend to outpace tuition income. The capital cost of supporting the faculty member and student in business is growing. Also, the physical plant, the library, the computer system, and the staff have to be maintained, enhanced, and expanded.

The John M. Olin Foundation's \$15 million grant responds to the reality of the need for greater endowment and a strong Annual Fund. When we meet the Olin Challenge in 1992, we will be among the nation's best endowed business schools.

We have made considerable progress under the overall leadership of Washington University Trustee Charles F. Knight, chairman, president, and chief executive officer of Emerson Electric Company, and the capital gifts committee chaired by Trustee Alvin Siteman, president of The Siteman Organization and chairman of Mark Twain Bancshares, Inc.

Important endowment commitments have been received from Emerson Electric Company, the May Department Stores Company, the late Hubert C. Moog and his wife, Dorothy, and Mark Twain Bancshares, Inc., and its family of directors. Endowed professorships from Robin E. Hernreich, Vernon and Marion Piper, Boatmen's Bancshares, and the Anheuser-Busch Charitable Trust will help us to further augment our senior faculty.



Trustee Alvin J. Siteman (left) and William E. Simon with the prestigious John M. Olin Cup.

The Annual Fund, at \$1,375,115, is up 14.3 percent over last year and achieved 34 percent alumni participation, including 63 percent participation by our 1989 graduating classes. We have 2,340 giving club members, and 481 of them are in the Eliot Society. Our Scholars in Business program has 220 scholarships in force.

Summary

The naming of the School has heightened enthusiasm among alumni and friends, and has given the School greater visibility both regionally and nationally. The John M. Olin Foundation's challenge affords the School the opportunity to realize its

objectives of exceptional quality in teaching and research. The increasing quality of our faculty, student body, and programs results from farsighted investments being made in the School.

Our overall objective, to join the ranks of the best, would be hollow if it were not for the exceptional support and confidence of our alumni and friends. We continue to depend on them and deeply appreciate all they do for the School. They inspire us all.

Robert L. Virgil

Dean

John M. Olin School of Business

On June second the Board of Trustees determined that the School of Dental Medicine would be closed through a gradual phase out. This completes a 22-year struggle for survival of the oldest dental school west of the Mississippi River. It is impossible to describe the sadness that pervades the faculty, staff, and students. Everyone had prayed that a different conclusion would be reached by the Board, but we must now focus on the new reality.

A year ago it was impossible to predict what was about to happen, and the annual report expressed the optimism I felt about the School's future. The subsequent departure of students, mostly as a result of vacancies in dental education programs subsidized through state support, resulted in unforeseen deficits. This process, in addition to the national issue of diminished student interest in dentistry, propelled the School toward a financial condition considered by the Board to be unstable.

In spite of the sadness we feel about the closing, there is much positive news to report about faculty and student activities.

Faculty Honors and Awards

Charles Hildebolt and Michael K. ShROUT received National Institute of Dental Research funding for a grant entitled "Assessment of Periodontal Disease by Digital Imaging." The project focuses on the evolution of digital images of dry skulls, and is conducted in cooperation with Michael Vannier of the medical school faculty. Results have been presented at meetings of the American Association of Dental Research and the American Association of Physical Anthropology.

Thomas Schiff has been reappointed as consultant to the American Dental Association Council on Dental Therapeutics. He recently received the

Air Force Commendation Medal for Meritorious Service. During the year he has lectured in Mexico and Malaysia.

Samuel Holroyd has completed preparation of the Second Edition of *Applied Pharmacology for the Dental Hygienist* (C.V. Mosby).

William F. P. Malone has completed the Eighth Edition of Tylman's *Fixed Prosthodontics* (Ishiyaka Euroamerica). He has been reappointed editor of the American Academy of Crown and Bridge Prosthodontics, and appointed to the Academy's Research Committee.

Donald Gay has been appointed to the Research Advisory Committee of the American Academy of Maxillofacial Prosthetics. Memory Elvin-Lewis, along with her husband, biology professor Walter Lewis, were featured in a National Geographic Society television special entitled "Secrets of the Forest Revisited." During the year she has presented research papers in Peru, India, and Egypt, while continuing her research on the development of phytochemicals for dentistry.

The Department of Biomedical Sciences continues to be active. Renovation and installation of the multi-user laser imaging system is complete. Keith Hruska, professor of medicine, and Paul Schlesinger will coordinate administration and management of the facility, which will allow extremely sensitive quantitation of fluorescent probes. Dean Dessem, assistant professor of anatomy, joined the department after completing an NIDR Post-doctoral Fellowship in London. His research focuses on understanding the neuroregulatory mechanisms in the orofacial region. Birte Graessner-Schreiber is a visiting professor sponsored by the German government, doing research in various aspects of bone cell regulation.

Philip Osdoby, acting chairman of the Department of Biomedical Sciences, received a \$580,000 renewal of his NIH grant entitled "Cellular Basis of Craniofacial Bone Disorders," a study



David A. Bensinger

of the influence of bone-forming cells and vascular components on osteoclast development. Marilyn Krukowski is co-principal investigator.

Patricia Collin-Osdoby and David Webber are co-investigators with Philip Osdoby as principal investigator in a \$400,000 NIH grant award entitled "Osteoclast Mediated Bone Remodeling." The study examines how osteoclasts influence osteoblasts, and how the process is modified with age. The research is a subproject of a five-year study at Jewish Hospital.

Recently a Japanese Public Television crew visited the School of Dental Medicine to film for a series titled "The Universe Within," featuring Dr. Osdoby's work on bone cell development.

Monika Strong edited the English edition of *Life Threatening Emergencies in Dentistry* for Piccin Nuova Libreria of Padua, Italy. Richard Brand was elected chairman-elect of the Section on Student Affairs of the American Association of Dental Schools. Marie Cuccia Liddy was elected chairman of the Financial Aid Section of the AADS, and chairman of the Financial Aid Advisory Committee of the AADS and American Student Dental Association.

A student exchange program was initiated in January 1989, with two Washington University seniors, Cory Evans and Curtis Howa, spending 10 weeks at Victoria University in Manchester, England, and two students from England spending a similar period here. The students participated in clinical care of patients and course work, and gained an understanding of health care systems and cultural differences. The program was funded by a grant from Columbus Dental Co., a subsidiary of Miles Laboratories.

Sharon Yee, a senior dental student, participated as a member of a team delivering dental care to the native population along the upper reaches of the Amazon River. Living on a river boat under spartan conditions for two weeks, she and her colleagues traveled through the villages and provided care to an acutely underserved population. Dr. J.D. Patterson, D.D.S. '52, sponsored the program.

Chris LoFrisco, a senior dental student, has been elected as the student member of the American Dental Association Commission on Accreditation.

The School of Dental Medicine will not formally close for three years, and the last entering class was admitted in August 1988. A long history of education and community service will end. The School has always been small by comparison to other schools—small enrollment, small faculty, and small budget. Nevertheless, it has achieved recognition for providing excellent educational opportunities, and for the quality of its graduates who serve as health care providers, researchers, and public servants. It is also important to recognize the dedication and loyalty of the faculty, for they were and are the heart and essence of the School. Throughout the years the faculty has remained faithful to the School and its students, in the good times as well as the less-than-good times. Their contributions will live in the minds of the alumni long after the School closes.

The consistent interest and support of the alumni have been evident in many ways. Ultimate confidence in the School has been demonstrated repeatedly as second and third



The School of Dental Medicine has provided important services to the St. Louis community since its founding.

generations of families return for education (and in one instance, a sixth generation!). For many years the percentage of alumni participating in annual giving ranked among the highest in the University. In the future, the School will live on in the good works of its alumni.

On July 1, Richard Smith will become the last dean of the School. His task will be difficult and thankless; he is to be commended for his willingness to accept the deanship. He is a man of

intellect and dedication, and under other circumstances he could have built the School into the nation's finest.

The loss of the School of Dental Medicine will begin a long period of mourning for all of us associated with it. There has always been something special about the School and its people. Many tears will be shed.

David A. Bensinger, D.D.S.
Dean
School of Dental Medicine

School of Engineering and Applied Science

During the 1988-89 academic year, the School of Engineering granted 239 Bachelor of Science degrees in eight different fields of engineering and applied science. These degrees were earned by 222 students who came from 35 states and six foreign countries. Students from the St. Louis area constituted 29 percent of the graduating class. Seventeen percent were women, and 11 percent were black, Spanish, and Asian American.

Thirty students earned more than one degree. The most popular degree combination remains the computer engineering option, which requires a student to earn Bachelor of Science degrees in both computer science and electrical engineering. Nine students completed this rigorous program. Combined bachelor's and master's degrees were also popular with three students receiving BS and MS degrees and five receiving BS and MBA degrees.

The School granted 107 Master of Science degrees, compared to 108 the previous year, eight Master of Construction Management degrees, and one Master of Structural Design degree. The School's evening school and professional division, the School of Technology and Information Management, granted 40 Bachelor of Technology degrees and 74 Bachelor of Science degrees in industrial production management and data processing. In addition it granted nine Master of Engineering Management and 25 Master of Information Management degrees. Continued enrollment growth in its graduate degree and certificate programs is anticipated.

At the doctoral level, 18 Doctor of Science degrees were granted, up from 17 the previous year. Over the past five years the School has granted 85 DSc degrees, of which 57 were earned by foreign students. Over the last five years, 67 percent of the engineering doctorates have been earned by foreign students. Roughly half of these students will remain permanently in the United States, entering both academic

positions and industrial research positions. These figures illustrate the growing dependence of American advanced technology on foreign talent.

The caliber of students in the applicant pool for the freshman class of 1989, based on class rank and Scholastic Aptitude Test scores, is outstanding. As of May 26 a total of 230 deposits had been received, compared to 216 at that date last year. The actual enrolled class should be approximately 220 students, which is at the upper edge of our target range.

The Three-Two Program also fared well. Deposits are running about the same as last year, indicating that the incoming class will number about 55. Given the success of both the freshman and Three-Two recruitment programs, a small increase in enrolled undergraduate students is anticipated for the 1989-90 academic year.

Demand for engineering graduates was quite strong. By Commencement more than 90 percent of the students seeking permanent positions through the Engineering Placement Office had accepted an offer. This year the number of companies visiting the Engineering Placement Office increased to about 100. Approximately 30 percent of the students graduating with bachelor's degrees will continue their education in graduate schools of engineering, business, and medicine. The 1988-89 academic year was the first full year of the Engineering CO-OP Program, and student interest in the program appears to be growing. As the 1989-90 academic year starts, 146 students are involved in CO-OP activities with more than 73 companies.

Three distinguished alumni received Alumni Achievement Awards at the 1989 Annual Dinner of the Engineering Century Club: Charles Buescher, Jr., BSCE '59, in recognition of his leadership role in providing quality water and water service to expanding urban communities; Rubin Feldman, BSChE '52, in recognition of his achievements in the development, manufacture, and marketing of



James M. McKelvey

advanced heat shield materials and fire protective materials for aerospace and industrial applications; Sanford N. McDonnell, MS '54, in recognition of his pioneering and leadership roles in the aerospace industry and information systems fields, and his very significant contribution to national defense.

Some important events concerning the faculty include the following:

Professor Jerome R. Cox, chairman of the Department of Computer Science, was named the first Harold and Adelaide Welge Professor of Computer Science.

Kenneth Jerina, professor of mechanical engineering, received the Burlington Northern award for excellence in undergraduate teaching, which carries with it an honorarium of \$5,000.

Ronald Indeck, assistant professor of electrical engineering, and Richard Rabbitt, assistant professor of mechanical engineering, were named Presidential Young Investigators by the National Science Foundation. In addition to the recognition, each is eligible to receive up to \$100,000 per year for five years in support of their research activities.

Professor John Zaborszky retired as chairman of the Department of Systems Science and Mathematics. He joined the

engineering faculty in 1956 and was the founder and only chairman of the department, which developed an international reputation for its research in the systems field.

Professor Harold Shipton, who joined the faculty in 1980, retired as director of the interdepartmental Graduate Program in Biomedical Engineering. Professor Shipton also served as chairman of the committee on engineering and premedicine, which has the important responsibility of advising and guiding engineering students interested in pursuing a medical degree and career.

Christopher I. Byrnes, who is recognized internationally for his research in the systems field, was named professor and chairman of the Department of Systems Science and Mathematics. He has had teaching experience at the University of Utah, Arizona State, and Harvard. In addition, Professor Alberto Isadori was named professor of systems science. He will divide the academic year equally between Washington University in the fall and the University of Rome in the spring.

The Five-Year Plan

The Five-Year Plan of the School of Engineering, approved by the Washington University Board of Trustees in the spring of 1987, provides for a substantial expansion of the School's facilities, faculty, research, and student enrollment, particularly at the doctoral level.

The first two years of the plan have been completed with the following results:

Facilities: Construction of the 54,000 square foot Harold D. Jolley Hall was started in the fall of 1988 and was more than half finished by July 1, 1989.

Faculty: For the base year of 1986-87 the School had 71 regular tenure-track faculty members. The Five-Year Plan calls for the faculty to increase in size to 93 members by the start of the fifth year. At the start of the 1989-90 academic year, the School will have 81 faculty. This growth in faculty is somewhat slower than anticipated, because the shortage of qualified people makes recruiting particularly difficult and competitive. The faculty recruitment problem is complicated by the substantial number of existing faculty who will soon reach retirement.



Dr. Salvatore Sutura's laboratory focuses on the flow and deformability of blood and its significance to human health.

Research: The target set by the Five-Year Plan for research is to double the volume of research over the period of the plan. In the base year of 1986-87 expenditures of money from outside sources for research in the School amounted to \$4.7 million, and to double this requires a compound annual growth rate of 15 percent, a target which has been met for the first two years of the plan and which is highly likely to be met during the coming academic year.

Doctoral Students: In the base year of 1986-87 the School granted 16 DSc degrees. The target is to double this by 1991-92. In 1988-89 the number granted was 18. The initial growth of doctoral degrees will be slow because of the length of time between the entry of a student into the program and the time of graduation. Based on the number of new students entering the School's doctoral programs, it seems likely that the target figure will be achieved by 1991-92.

Advancement Campaign: The total amount of money needed to implement the Five-Year Plan is \$21.25 million. At the start of the Five-Year period the School had in hand \$16 million. The goal of the Advancement Campaign is to raise the remaining \$5.25 million needed for the plan by June 30, 1990. An Advancement Campaign Committee, chaired by alumnus Stanley Lopata, LA '35, is assisting the School in this undertaking. As of June 30, 1989, approximately \$4.25 million in gifts and pledges had been received. The School anticipates a successful conclusion of the campaign during the current academic year.

James M. McKelvey
Dean
School of Engineering
and Applied Science

School of Fine Arts

This report must start with my thanks to the faculty, administrators, staff, alumni, and friends who have made this past year such a pleasant and rewarding experience. Everyone worked hard to help an acting dean and newcomer survive a year in fine art. Two people in particular—Ron Leax, the associate dean, and Laura Serafin, the assistant to the dean and business manager—were of enormous help. Without advice and assistance from these members of the staff, this year would have been much less satisfactory for everyone.

The big news is that after a year with an interim dean, the search for a real dean is over. A search committee, chaired by Professor Michael Friedlander of physics, successfully recruited a superb new dean who is expected to assume office in August 1989. Joe Deal, formerly professor of art and associate dean of humanities and social sciences at the University of California, Riverside, will bring to the School substantial administrative experience and a national reputation in photography.

Because this was a transitional year, no major new developments occurred. This was intentional. Maintenance and preparation for a new administration was the primary focus.

Enrollment

Enrollment continued to improve. The undergraduate student body reached 298, and 35 graduate students were working toward the M.F.A. degree. This improved enrollment (in 1986-87 there were only 232 undergraduates) has been vitally important in providing financial flexibility for the School. Next year's freshman class, now projected to be 70, plus a number of upper-class transfers and a substantial number of first-year graduate students, ensure that enrollment will continue to be strong.

However, the costs associated with independent higher education, the shrinking pool of high school students, and the interests of many students in remunerative professional careers make building an art class a difficult

task. The imagination and energy of many people, including the admissions staff, faculty, and alumni, will be required for continued success. The efforts of many people contributed to this year's happy results, and Georgia Binnington, the admissions office staff member responsible for fine arts, deserves special mention. Her performance was exemplary.

Finance and Facilities

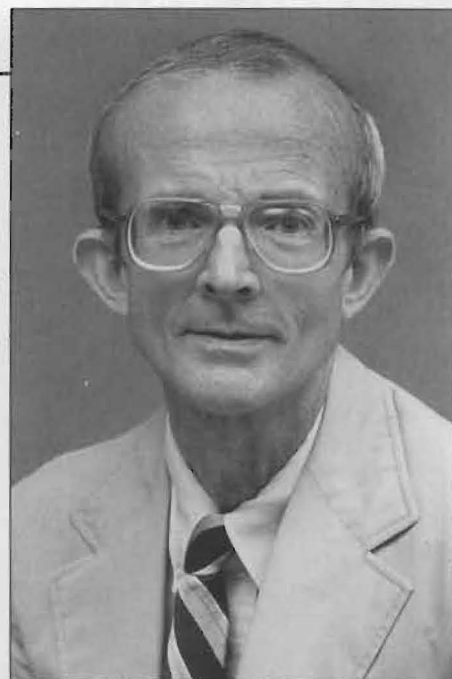
Successful recruiting does not automatically lead to financial sufficiency. It is clear that substantial resources beyond tuition revenue will be essential if the faculty is to be rewarded appropriately, if the facilities are to be improved and maintained, and if equipment is to be added. Also, as tuition rises, so does the need for financial aid.

In visual arts, it is not possible, as it may be in some fields, to generate revenue by expanding the size of lecture classes. That would quickly erode the quality of instruction because teaching visual arts is faculty intensive, and personnel costs are high.

Consequently, it has been common in the arts to defer maintenance and slight facilities, but this cannot work indefinitely. Bixby Hall is now more than 60 years old and is graying. This year modest progress began on improving ventilation (vital in areas where toxic acids and solvents are used), but much remains to be done. Security, accessibility, convenience, and comfort are all needs that require attention.

The space in Bixby, insufficient for the enrollment and the many programs of the School, has been supplemented for some years by off-campus space in the Lewis Center. This space is vital, but only marginally adequate, and off-campus space complicates communication and collegiality. In coming years, facilities must be high on the School's agenda.

The needs of art are many, diverse, and expensive. The computer revolution has come to fine arts, especially in graphic communications.



James W. Davis

The needs of photography for equipment are obvious. Printmaking needs presses. Sculpture needs both materials and tools. No area is without special needs. This year modest acquisitions were made in all areas, and special help was received to make progress in computing, but much remains to be done.

These points are not meant to diminish the successes and strengths of the School, but it is important that all those interested in a strong School know of its needs as well as its assets and think of its future as well as its past.

Gifts to the School

Giving to the School by alumni, friends, and parents has been gratifying. All of the indices are positive. The proportion of alumni giving (21.1 percent) stayed even with last year and was ahead of 1987. Giving to the Annual Fund was up to almost \$200,000 this year. Membership in the Eliot Society increased, and one parent contributed a \$50,000 matching gift, which other parents generously more than matched. My thanks to all involved. Particular programs of the School were also fortunate in receiving gifts of equipment and instructional time.

Such munificent help from so many supporters is greatly appreciated and is essential to the health and well-being of the School.

Alumni Activity

One highlight of the year was a fashion show in the Gallery of Art featuring designs by Carolynne Roehm, B.F.A. '73. Roehm also talked with fashion students about her successful career in fashion design.

Prominent illustrator Jack Unruh, B.F.A. '57, received a Distinguished Alumni citation at Founders Day.

A reception was held for alumni in San Francisco in conjunction with the annual meeting of the College Art Association. This meeting and reception are particularly useful for our M.F.A. candidates who are seeking academic positions.

Alumni from many classes gathered for the traditional reunion activities following commencement. A reception for all fine arts graduates was held in Bixby Gallery amidst a display of freshman and sophomore art. Alumni were also invited to visit the B.F.A. show on view in the Gallery of Art.

Student Accomplishments

Student shows were among the year's brightest points—a fashion show of professional quality produced with the generous assistance of Famous-Barr; an M.F.A. show so large that it had to be shown in two sections; and the B.F.A. show in the Gallery of Art during commencement.

The quality of the work displayed in the shows explains why our students are so successful in prize competitions. Terrance (Chip) Dunahugh won the Norfolk prize, which provides a summer of study in the Yale School of Art. Alan Weiner was selected for a summer of study at Skowhegan in Maine. Michael Joo was awarded the \$4,000 Milliken Traveling Fellowship. Sara Rodney and Marta Gomez won \$500 prizes in the Liquitex Art Materials program, and this is only an illustrative list.

This year 62 students received the B.F.A., and 18 received the M.F.A. degree.

Faculty Activity

The Faculty Show in the Gallery of Art served as a splendid way to introduce the acting dean to the work and interests of the faculty. Throughout the year a number of faculty members had



Carolynne Roehm, B.F.A. '73, discussing her designs at the Gallery of Art.

shows of their work in St. Louis galleries, and several had shows away from St. Louis. Bill Kohn, for example, had a show in the Jan Cicero Gallery in Chicago; Bill Hawk had a show in the Esther Saks Gallery in Chicago; and Jim McGarrell exhibited work in Philadelphia. Bill Quinn was part of a four-person show at the University of Missouri in Columbia. Printmakers Peter Marcus and Joan Hall were part of a group show in Japan, and sculptor Ed Andrews had a show at the N.A.M.E. Gallery in Chicago.

Visiting artists are a major source of stimulation for faculty and students. Southwest artist Jaune Quick-to-See Smith was this year's Louis D. Beaumont Distinguished Visiting Professor of Art, and her lectures explaining the art of native Americans were stimulating and informative. An artist once in St. Louis and now in Maryland, Phyllis Plattner, served as the Wallace H. Smith Visiting Professor of Art. A number of other artists visited for periods ranging from a day to a semester, such as Joe Stefanelli, a painter from New York, who taught while Professor McGarrell was on leave.

The faculty was strengthened by the addition of two new faculty members: Betsy Morris, an assistant professor in the 2D Core program, and Marlene Alt, a lecturer in 3D Core and sculpture. Morris has an M.F.A. from Indiana University and has taught at both Indiana and Southwest Missouri State University. Alt has an M.F.A. from the University of California, San Diego, and has taught both there and at National University in San Diego.

In Conclusion

It has been an active and exciting year. The School has excellent programs, excellent faculty, and excellent students. The quality of the facilities, now incongruent with the rest of the School, must be enhanced. Fortunately, I believe that the School is now poised for progress.

James W. Davis

Professor of Political Science
Acting Dean, School of Fine Arts

School of Law

The School of Law's academic year began and ended on high notes. Clark M. Clifford, LW 28, delivered the principal address at the Fall Convocation. The year ended with the announcement that Professor Kathleen E. Brickey had been appointed the George Alexander Madill Professor of Law.

Faculty Activities

Three outstanding new faculty members joined us in the fall. Assistant Professor Barbara Flagg teaches Constitutional Law, Alternative Dispute Resolution, and Sex Discrimination. Associate Professor Francis Foster-Simons teaches Property, Trusts and Estates, and the Law of Socialist Countries. Assistant Professor Dan Keating teaches Commercial Law, and Banking and Bankruptcy Law.

Professors Susan Appleton and Charles McManis were elected to the American Law Institute, and Susan has been retained by the New Jersey Bioethics Commission as a special consultant. Professor Robert Thompson testified before the North Carolina legislature and was an invited participant in the Conference on Contractual Freedom in Corporate Law at Columbia University. Professors Daniel Mandelker and E. Thomas Sullivan both published new books during the year, and one of Dan's articles was selected by the Transportation Research Board as the year's best paper on transportation law. Professor Jules Gerard delivered the Donohu Lecture at Suffolk University Law School. Professor William Jones lectured on Chinese law at Harvard and N.Y.U. and delivered papers at the Annual Meeting of the Association for Asian Studies and the American Society for Legal History. Professor Brickey was named chair of the AALS Section on Criminal Justice and was elected to the International Criminal Law Reform Society. Associate Professor Roy Simon was promoted to full professor and was granted tenure.

Four visiting professors taught at the School during the year. Professor Dennis Karjala, from Arizona State University, taught Corporations and

Computer Law. Professor Dan Schneider, from Western Illinois University, taught Income Taxes and Business Planning. Assistant Professor Susan Carlson taught courses in the clinic and acted as advisor to several student competitions. Associate Professor Lawrence Iannotti taught Evidence, Legal Profession, and Trial Practice.

Professor E. Thomas Sullivan resigned to become dean of the University of Arizona College of Law, and Associate Professor Stan Krauss resigned to accept a teaching position at the University of San Diego.

Students

Applications for admission increased substantially in the fall of 1988, and the 218 students who enrolled arrived with excellent academic credentials. They came from 38 states and two foreign countries. Nearly half were women, and more than 10 percent were ethnic minorities. Applications for 1989 are up by 17 percent.

Student teams again reached the championship level in the National Trial Competition and in four Appellate Moot Court Competitions. More than 600 students participated in intramural competitions, and the School hosted the Regional ABA Moot Court Competition in the spring.

Editor-in-Chief Laura Rebbe, LW 89, published four excellent issues of the *Washington University Law Quarterly*.

Administration

Debra Carlson Wood, LW 85, assumed the position of assistant dean for student affairs. Denise Scalzo was appointed the director of development. Lauri Strimkovsky is now business manager, and Renai Basta Lowry was appointed assistant dean for external affairs.

Special Events

Conferences, panel discussions, and lectures contributed to the intellectual vitality of the School. In September we hosted a national conference on the 40th anniversary of *Shelley vs Kraemer*, at which the Honorable A. Leon Higginbotham, Circuit Judge, U.S. Court of Appeals for the Third Circuit, delivered the major public address and



Dorsey D. Ellis, Jr.

delivered the major public address and Professor Francis A. Allen, Edson R. Sunderland Professor of Law Emeritus at the University of Michigan and Huber C. Hurst Eminent Scholar at the University of Florida, provided the opening address. Other nationally prominent scholars participated, and papers from the conference are being published in the *Quarterly*.

In March, Justice William J. Brennan, Jr. presented the Tyrrell Williams lecture, which will be published in the *Quarterly*. Justice Brennan was introduced by Honorable William H. Webster, LW 49, and both men met informally with students and faculty.

Justice Dennis A. Archer of the Michigan Supreme Court spoke on opportunities for minorities in the legal profession. Judge Kenneth Starr, Solicitor General of the United States, presided at the fall Wiley Rutledge Moot Court final arguments and spoke to students and faculty, and Chief Judge Ellen Bree Burns of the District of Connecticut presided at the spring final arguments. Judge Thomas Meskill of the U.S. Court of Appeals for the Second Circuit presided at the ABA Regional Moot Court Competition.

The Pro-Bono Law Society sponsored a showing of the banned film, "Ticut Follies," followed by a panel discussion on the treatment of the mentally ill. The Federalist Society joined with the International Law Association to sponsor a panel on international trade,

and the Women's Law Caucus brought Rhonda Copelon to discuss the abortion controversy.

The Building

We have rearranged some of the space in Seely G. Mudd Hall, the interior has been painted, chairs have been replaced, and we have displayed the many plaques and awards received by students and faculty over the years. Thanks in part to generous support from several adjunct professors and alumni members of the American College of Trial Lawyers, we have refurbished the moot courtroom, and the room has been repainted.

A faculty-student committee issued its report on our space needs and documented the building's fundamental inadequacies. Growth in the library, the student body and faculty, and changes in legal education over the years, leave us with substantial and urgent space needs. Currently, we are exploring whether those needs can be satisfied by expanding the current building, by replacing it, or by some other alternative.

Asian Legal Studies

The addition of Francis Foster-Simons has strengthened our expertise in Asian and Soviet law. In addition, this academic year was the first of three in which a faculty exchange with Sichuan University in Chengdu, China, is being funded by the U.S.I.A. In the fall we co-hosted, with St. Louis University, Dean Zhao Binshou and Professor Zhou Wei from Sichuan. In May and June, Professor Charles McManis taught at Sichuan University, but the problems in China raise doubts about the continuation of the exchange program.

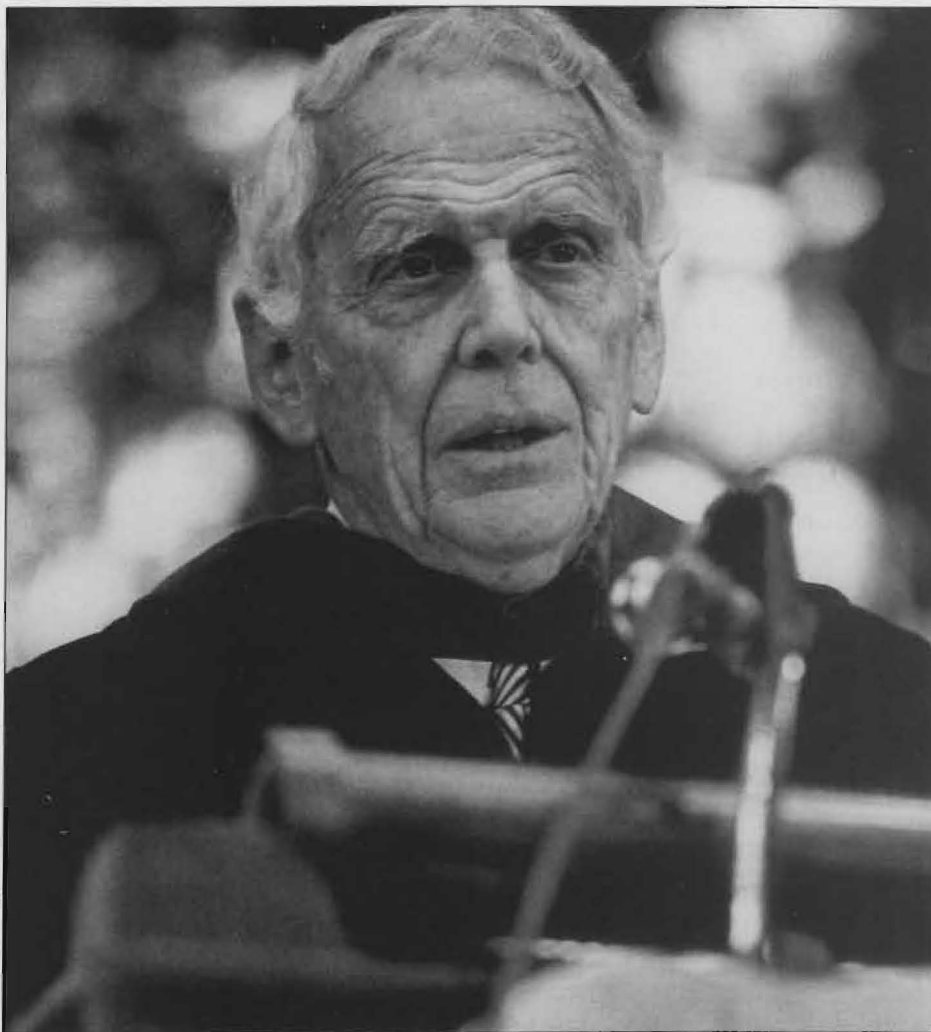
Our scholar in residence this year was Professor Ching Tianquan from Fudan University in Shanghai, and Dong Shizong, dean of Fudan's Law School, visited Professor Jones' class.

Alumni Activities

Alumni events were held in Washington, D.C., New York, Chicago, Denver, New Orleans, and at the ABA meeting in Toronto.

Alumni and friends served as adjunct faculty and as legal writing instructors for first-year students. In addition, nearly 600 members of the bench and bar served as judges for student competitions.

Distinguished Alumni Awards were conferred on Professor Frank R.



Clark M. Clifford, LW 28, speaking at the Fall Convocation.

Kennedy, LW 39, the Thomas M. Cooley Professor Emeritus at the University of Michigan Law School, and Bertram Tremayne, LW 38, former president of the Missouri Bar Association.

A record number of classes held special reunion events, and the classes of 1939 and 1964 presented significant gifts. Carrol Donohue, LW 39, and Joseph Kuttan, LW 39, provided leadership for the 50th Reunion and its class gift, and James Mauze, LW 64, chaired the committee for the 25th Reunion and gift. William Webster, LW 49, and Rex Caruthers, LW 49, organized a reunion party for their class, and Don Gallop, LW 59, and Maury Proscover, LW 69, hosted their reunions.

The Law Alumni Association, led by President Paul Denk, LW 63, provided organization and support for Century Club Breakfasts, a new alumni-student recruiting network, and the reunion and development committees.

Under the leadership of Don Gallop, LW 59, and the members of the Eliot Society Committee, we experienced a record increase in new members this year. Bert Tremayne, LW 38, chaired the Annual Giving Committee, and there was a 12 percent increase in annual giving in 1988-89.

At its fall meeting, the School of Law National Council received information about the School, its status, and activities. At the spring meeting, committees advised us on admissions and student recruitment, career counseling and placement, and alumni and development activities. It is apparent that this Council of distinguished alumni and friends will play a critical role in the School in this period of change and growth.

Dorsey D. Ellis, Jr.

Dean
School of Law

School of Medicine

In my annual report two years ago, I mentioned my pleasure that the Executive Faculty had voted to undertake the construction of a new library. During the summer of 1989 we opened this new state-of-the-art facility and put it into active service of the School's education, research, and patient care missions.

This new library—with more than 114,000 square feet—is several times larger than the old library. It has space for 683 users and 420,000 volumes. The total cost of building, furnishing, and equipping the new Library and Biomedical Communications Center is \$16.3 million. I cannot thank enough the many persons whose generous support of this School has made the new facility a reality.

Also, the new pedestrian bridge over Scott Avenue makes it possible to travel indoors nearly all the way across our 59-acre campus.

Faculty News

Dale Purves, M.D., professor of neurobiology, has been elected to the National Academy of Sciences. He was recognized for his studies of nerve cell growth, specifically the maintenance and formation of synapses.

Maynard V. Olson, Ph.D., professor of genetics, was chosen as one of 12 members of the National Institute of Health's Program Advisory Committee on the Human Genome. Selection to such a highly visible position provides the opportunity to influence one of the most massive undertakings in the history of science.

Gary K. Ackers, Ph.D., has been appointed head of the Department of Biochemistry and Molecular Biophysics. Dr. Ackers is also Washington University's first Raymond H. Wittcoff Professor.

C. Robert Cloninger, M.D., has succeeded Samuel B. Guze as head of the Department of Psychiatry. Dr. Guze retired as department head but will continue as Olin Professor, concentrating full time on patient care and research activities. Dr. Cloninger received his M.D. from this School and has been a member of the faculty for more than 15 years.

Carolyn Baum has been appointed the Elias Michael Director of the Program in Occupational Therapy and will continue as director of occupational therapy clinical services at the Irene Walter Johnson Institute of Rehabilitation.

Philip W. Majerus, M.D., professor of biological chemistry and medicine, was elected to the Institute of Medicine, which is a part of the National Academy of Sciences.

Garland R. Marshall, Ph.D., professor of pharmacology and biological chemistry, received the 1988 American Chemical Society Award in Medicinal Chemistry in recognition of his pioneering contributions to the field of computer-aided drug design.

Saulo Klahr, M.D., Joseph Friedman Professor of Renal Diseases in Medicine and director of the renal division, has been elected president of the National Kidney Foundation.

Philip Needleman, Ph.D., Research Professor of Pharmacology, was selected as a co-recipient of the 1988 Research Achievement Award of the American Heart Association in recognition of his contributions to the identification and understanding of atrial natriuretic factor, a factor in the blood that regulates salt and fluid balances in the body.

We received word last year, too late to be included in my annual report, that three faculty members had been elected to fellowship in the American Academy of Arts and Sciences. So belatedly I congratulate Gerald D. Fischbach, M.D., Stuart Kornfeld, M.D., and Philip W. Majerus, M.D., for election to the Academy. Two more faculty members were elected this year: William Daughaday, M.D., and Emil Unanue, M.D. Dr. Daughaday is recognized for metabolism research and human growth and development studies. Dr. Unanue, head of the Department of Pathology, is widely regarded as one of the world's leading immunologists.

Ronald G. Evens, M.D., Elizabeth Mallinckrodt Professor and head of radiology and director of Mallinckrodt Institute of Radiology, was installed as president of the 4,100-member



M. Kenton King

American Roentgen Ray Society (ARRS) at the organization's annual meeting. Dr. Evens also serves the University as vice chancellor for financial affairs—the first time, to my knowledge, that a physician has served as the University's chief financial officer.

Research

This year the School provided the first allocation of research funds from the \$12 million provided by the Lucille P. Markey Charitable Trust of Miami to establish our Markey Center for Research on the Molecular Biology of Human Disease. The first-year allotment of approximately \$1.8 million was used to award eight research grants, purchase state-of-the-art molecular biology, analytical chemistry, and computer-assisted microscopy equipment, and recruit a new faculty member.

The director of the Lipid Research Center, Gustav Schonfeld, M.D., Kountz Professor of Medicine, was awarded a \$1.1 million grant from NIH to study the role of apolipoprotein B in the development of atherosclerosis.

Assistant Professor Michael J. Holtzman, M.D., received one grant from the National Heart, Lung and Blood Institute and another from the American Lung Association totalling more than \$1 million to support his study of asthma and other diseases that compromise respiratory function.

Professor of Medicine Marc R. Hammerman, M.D., has received a grant of \$832,000 from the National Institute of Diabetes and Digestive and Kidney Diseases to continue his study of specific growth factors' effects on normal kidney development.

Virologist Sondra Schlesinger, Ph.D., professor of microbiology and immunology, received a grant of \$800,000 from the National Institute of Allergy and Infectious Diseases to further study the structure and replication of Sindbis virus, a virus closely related to those known to cause encephalitis and one form of hepatitis.

Finally, Philip D. Stahl, Ph.D., Edward Mallinckrodt Jr. Professor and head of cell biology and physiology, received an NIH award of almost \$700,000 to study the biochemistry of endocytosis.

Overall, research support from government and private resources was stronger this year than ever before. Total government research and training support was more than \$87 million, significantly exceeding the previous year's level. Our NIH support was distributed across more than 417 grants and contracts.

Students

We had almost 3,500 applicants for the 120 places in our 1988-89 first-year class. Our ratio of applicants per position remains nearly 30 to one, and gives us an enviable position nationally in a time when there has been a decrease in the number of applicants to medical schools. The mean grade point average of our entering class was 3.63 out of 4.0, and we had students from 43 states and four foreign countries.

In 1989 the School of Medicine conferred 108 M.D. degrees. In addition, two students graduated with combined M.A./M.D. degrees and 12 with M.D./Ph.D. degrees. Graduating students who participated in the National Residency Matching Program matched one of their top three choices in 87 percent of the cases, with 60 percent obtaining their first choice.

Enrollments increased from 201 to 212 in the Division of Biology and Biomedical Sciences, from 119 to 131 in physical therapy, from 58 to 72 in occupational therapy, and from 64 to 76 in health administration.

Our joint M.D./Ph.D. program is one of the largest in the country; in the last four years the number of enrollees has increased from 80 to 115.



Construction of the new Library and Biomedical Communications Center was completed this summer, providing space for 683 users and 420,000 volumes.

Gifts and Alumni Support

This past year we completed the campaigns or received firm commitments for several new endowed professorships. One will be the Evarts A. Graham Professor of Surgery. Dr. Graham was chairman of the Department of Surgery here for 32 years, from 1919 to 1951. The tireless efforts of Eugene M. Bricker, M.D. '34, were the driving force behind establishing this honor to the memory and legacy of Dr. Graham.

Two other professorships established this year are Alumni Endowed Professorships. They are the result of many gifts from the alumni of the School. One has been assigned to the Department of Microbiology and Immunology, and the other has not yet been assigned. An additional Alumni Endowed Professorship has been begun.

Funding for the Library and Biomedical Communications Center was a top priority this year. Alumni, friends, and faculty contributed a substantial amount to support this new and important addition to the School.

Total gifts to the School of Medicine from all sources for fiscal year '89 exceeded \$24 million. Our alumni have, as always, been extremely generous: they contributed \$558,000 of this year's \$860,000 Annual Fund with almost 40 percent of M.D. alumni contributing. Total giving from our alumni, including both restricted and unrestricted gifts, exceeded \$2.9 million.

Thank you all for your continuing support of the Washington University School of Medicine.

M. Kenton King

Dean
School of Medicine

George Warren Brown

School of Social Work

The George Warren Brown School of Social Work concluded the year 1988-89 on a high note. Faculty morale and productivity remained high. Student enrollment was up. A decision was made to offer more electives and to add new skill-oriented courses to the curriculum. The School ended the fiscal year in the black, and a new scholarship, made possible by the late Araminta Smith, MSW '58, was established.

Students and Alumni

Four students earned the doctoral degree and 118 the master's degree in social work, the largest number of MSW degrees awarded by GWB since 1982-83. In the spring of 1989, 300 students enrolled in the MSW program. This was the highest number of MSW students in the School since the fall semester of 1981.

The graduating students were a diverse group with a wide range of talents and interests. Several MSW and Ph.D. students presented papers at meetings of professional associations. A new student organization, Consolidated Black Students, was formed as a support group for our black students. This organization hosted a series of programs during Black History Month in March. As in previous years, our international students, who form a sizable portion of the GWB student body, put together interesting events highlighting the cultural and culinary richness of their native lands.

The GWB Alumni Association participated actively in phonathons to raise funds for the School, held receptions for prospective as well as graduating students, sponsored a lecture by consultant Louis Feur on managing social work careers and, with the School, co-hosted a reception at the annual conference of the National Association of Social Workers in Philadelphia last November. The Alumni Association gave the Outstanding Alumni Award to Pearlle Evans, MSW '56, district assistant to Representative William L. Clay.

Many GWB alumni received recognition during the year for their service and leadership contributions. In St. Louis, Kathy Higley, MSW '72, was selected as a Woman of Achievement by the Suburban Journals and KMOX Radio.

Faculty

The GWB faculty is one of the smallest in schools of comparable stature. It is also one of the most scholarly. Last year saw the publication of a book titled *Race, Class and Gender: Guidelines for Practice with Individuals, Families and Groups* by Associate Professors Larry E. Davis and Enola K. Proctor. Assistant Professor Arlene Stiffman co-edited, with former faculty member Ronald A. Feldman, a volume titled *Advances in Adolescent Mental Health: Depression and Suicide*. Professor Martha N. Ozawa, who received a Distinguished Faculty Award at the Washington University Founders Day celebration last fall, published *Women's Life Cycle: A Japan-U.S. Comparison in Income Maintenance*.

The National Institute of Mental Health awarded a three-year grant to the School to establish a clinical training program in minority mental health. Associate Professor Robert L. Pierce is directing this project. The School also received two grants to train child welfare personnel. Assistant Dean David L. Cronin is directing these projects, funded by the Children's Bureau of the Department of Health and Human Services. A three-year grant to study behavior change in young adults at risk for AIDS was awarded by the National Institute of Mental Health to Assistant Professor Arlene Stiffman, who is the principal investigator for this project.

After providing excellent leadership to the Ph.D. program for six years, Professor David F. Gillespie decided to return to full-time teaching and research responsibilities. Associate Professor Enola K. Proctor was appointed the new chair of the Ph.D. program in social work.



Shanti K. Khinduka

Three new faculty appointments were made for next fall. Dorothy Becvar, a specialist in family therapy, will serve as clinician-in-residence. Cynthia L. Cook, who is an expert in the area of mental health and clinical social work, and Mark Rank, who specializes in family social policy, will join as assistant professors.

Visitors to the School

The GWB Lecture Series, initiated some years ago, brought to the School many prominent speakers. Among them were Clyde Cahill, Judge, U.S. Court for Eastern District of Missouri; David S. Liederman, executive director of the Child Welfare League of America; Colonel Jesse J. Harris, director of social services at Walter Reed Hospital; and Sarah Austin, director, McAir Business Team, McDonnell Douglas Corporation. The 1989 Benjamin E. Youngdahl Lecture on Social Policy was delivered by Michael Harrington, the noted author of *The Other America*.

Dharni Sinha, principal, Administrative Staff College of India, served as the first Barbara Bailey visiting professor last spring. Harriett Woods, former lieutenant governor of Missouri, was the speaker at the social work commencement, which was held in Graham Chapel.



Kimberly Poyer (left), MSW 89, with Marianne Oliphant, MSW 85, Coordinator of Outpatient Services at Hyland Center, St. Anthony's Medical Center.

The National Council

The Social Work National Council held two meetings during the year. It formed two committees—one on student recruitment and the other on corporate contacts. These committees are ably led by Sarah Austin of McDonnell Douglas Corporation and JoAnn Harmon of Emerson Electric Company, respectively.

The Committee on Student Recruitment reviewed the current efforts of the GWB admissions office and the national recruitment picture for graduate schools of social work. It provided stimulus for the School to develop a five-year plan for student enrollment. The key objectives of the enrollment plan are to increase significantly the number of prospects, applicants, and matriculants in the program and to further strengthen the quality and diversity of the student body.

The Committee on Corporate Contacts explored ways to increase contact between the School and

St. Louis corporations in areas of mutual interest. It made a number of practical proposals to enhance GWB's visibility in the corporate sector and convened two successful meetings with representatives from area corporations. These efforts are expected to increase the number of social work student internships in local corporations.

Planning for the Future

The School initiated the preparation of medium-term plans by its various units. Thus, the GWB library, the admissions staff, the field education program, and the placement office have all begun to prepare five-year plans for their respective areas.

At its spring meeting, the National Council of GWB, under the supportive guidance of Edwin S. Jones, asked the School to develop a plan to become and remain one of the top five schools of social work in the United States.

While some faculty and many alumni and peers in other educational institutions believe that GWB is already

among the top five schools of social work in the nation, it is necessary to assess our standing realistically and, taking into account the traditions of the School, its current resources, and the external environment, prepare a feasible plan for its continuing excellence. For a variety of reasons, it will be an opportune time for the George Warren Brown School of Social Work to plan carefully its future course and areas for development. I anticipate that the faculty will be spending considerable time and energy next year in the exciting task of fashioning growth strategies for GWB for the decade of the 1990s.

Shanti K. Khinduka

Dean
George Warren Brown
School of Social Work

In October 1988, I assumed responsibility for the University Libraries when Acting Dean Bernard D. Reams, Jr. resumed his academic and administrative activities in the School of Law. A number of notable events and activities occurred during my tenure, chief among them the appointment of Shirley K. Baker as Dean of University Libraries. Ms. Baker's arrival on August 1 marks an end to almost three years of temporary stewardship and creates a sense of stability for all who work in or patronize the Libraries. She brings to the position a solid professional background, capable leadership qualities, and an enthusiasm for the challenges at hand.

University Support

The Libraries received an 18 percent overall budget increase for FY1989-90. This infusion of funds clearly signals the strong commitment of the University to strengthen the Libraries as an effective research and pedagogical instrument. The funds will be spent to upgrade acquisitions, staffing, automation, and equipment.

Acquisitions: The acquisitions budget over the years simply has not kept pace with the astonishing escalation in the cost of published materials. Serial costs, particularly those in the sciences, have wreaked havoc on library budgets and caused an imbalance in purchases to the detriment of the book collection. The acquisition of books, which is of particular importance to the humanities and some social sciences, has suffered severely. The University Libraries are addressing this problem in three ways: 1) developing policies to prevent serials from dominating the acquisitions budget; 2) creating a more equitable system of acquisitions allocations for academic units, which takes into account both serials and monographs; 3) devoting a substantial portion of the increase of funds to monograph purchases. To underscore the importance of retrospective purchases in the humanities, Naomi Lebowitz, Hortense and Tobias Lewin Distinguished Professor in the

Humanities, established a Humanities Book Fund. Saul Rosenzweig, Professor Emeritus of Psychology and of Medical Psychology in Psychiatry, made a similar commitment for psychology.

The recent support of the University administration is evidenced in the improvement of the Libraries' acquisitions position with respect to the other 110 university members of the Association of Research Libraries. In FY88 we moved up 10 places in the rankings for volumes added, two positions in current serials, and dramatically in materials expenditures, from 60th in 1987 to 42nd in 1988.

Staffing: This year we will add 13 new staff positions, allowing us to address many service needs, such as the resumption of reference assistance on Saturday and the addition of staff in departmental libraries and service points in Olin. Additions to the cataloging corps will enable the Libraries to begin the conversion process for adding serials titles to LUIS, the computer catalog. An expanded systems staff will keep us moving forward on these and other critical automation projects.

Automation: While electronic wizardry has not replaced the printed word, technology is greatly improving the information gathering process. A recent enhancement gives faculty and students the ability to access LUIS from terminal screens in their home, office, or laboratory.

Currently, LUIS holds information only on materials cataloged since 1978 and a partial listing of serial titles. The retrospective conversion project, noted above, will add the titles of approximately 10,000 serials to the LUIS database.

The computer catalog is only one facet of the automated, integrated network, called NOTIS, being implemented in the University Libraries. The circulation function is currently being introduced. A third system will begin this summer that will automate some of the acquisitions procedures and provide information on acquisitions data for tracking and planning. In addition, it will enable patrons to ascertain the status of new and pending orders.



Burton M. Wheeler

Equipment: To make available information contained in our vast microform collection, we installed eight new microform readers. Other equipment improvements introduced this year in Olin include the addition of new photocopiers, printer linkups to LUIS terminals, and two CD-ROM workstations with eight databases. CD-ROM (compact disc-read only memory), which employs the same technology used in the music industry, significantly expedites bibliographic research. Another important equipment purchase was a security system for the Art and Architecture and the Music libraries.

Activities

Patron Services: The activities of the Libraries support a diverse and ever-growing range of research and scholarship at Washington University. Statistics compiled during the past academic year bear this out: the General Reference Services Unit was consulted more than 40,000 times. Another 23,000 patrons were assisted at the Information Desk. Once again, the University Libraries served as a net lender, receiving close to 9,000 loan requests from other institutions throughout the world. In turn, we borrowed approximately 4,700 items from other libraries for our patrons. From July 1988 through April 1989, the turnstile count for Olin alone was more than 531,000. In that same period,

almost 250,000 volumes were loaned, over 25,000 volumes were cataloged, and the computer catalog, LUIS, was consulted 2.5 million times.

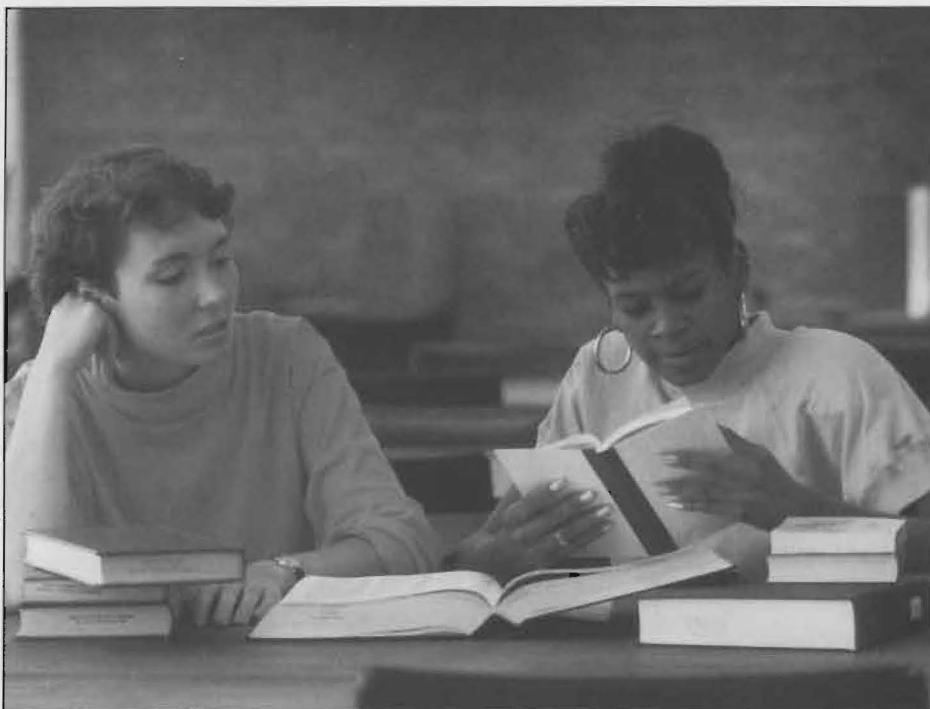
Preservation: With the assistance of a grant from the Burlington Northern Foundation, the preservation staff engaged in many useful activities. A logo contest initiated "Preservation Year," a series of events designed to educate library users on preservation issues. The winning logo, printed on bookmarks and plastic bags, serves as a reminder to handle library materials with care. Other events included lectures, staff education programs, and exhibits devoted to various topics on preservation.

National Council: The National Council for University Libraries met for the third time. The members of our Council, who have a deep and abiding interest in the improvement of the Libraries, will be valuable as an advisory body for Dean Baker as she faces the issues and challenges of the future.

Library Council: The Library Council, which represents the faculty body, has been very active this year, working closely with Library staff to delve into issues affecting scholarship and research. This past spring the Council was divided into four subcommittees: 1) Acquisitions (serials); 2) Acquisitions (monographs); 3) Automated Information System Expansion; 4) Space/facilities. The subcommittees studied the issues involved and made reports. Many of these suggestions already have been implemented. We are indebted to the assistance given by this advisory committee.

Bookmark Society: The Bookmark Society held several fine programs this year. Two commemorated the centenary of influential writers T.S. Eliot and Eugene O'Neill; one discussed children's literature; and another tried to bring perspective to the *Satanic Verses* controversy.

After four years of operation, the Bookmark Society became a two-tiered membership organization, separating the literary-oriented benefits from the library borrowing privileges. The structural change and price increase for circulation benefits was necessitated by the demands this growing body makes on the Libraries.



The turnstile count at Olin Library approached 600,000 this year, and the computer catalog was consulted almost three million times.

Gifts

In addition to the gifts, pledges, and in-kind contributions we received this year, I would like to acknowledge a very special gift that was given to us by Mr. and Mrs. Howard Baer. It is a bronze bust of the English writer W. Somerset Maugham, created by Sir Jacob Epstein. Our friends have been very generous, and we thank them for remembering the Libraries. These gifts are testimony to the belief that the Libraries are central to the academic enterprise.

Space/Facilities

With space at a premium in all the University Libraries, planning has begun to address long-term growth needs. Space, or lack of it, provided the focus for the most recent session of the Library National Council. The plight of the departmental libraries was discussed at length. Although the situation is much more acute in some libraries than others, all need more space. Plans are underway to add shelving and transfer lesser-used materials to a remote storage facility. While these actions will provide some relief, more permanent solutions must be found. Possible options for Olin Library expansion were also discussed at the National Council meeting. While the shelving situation is currently stable

in Olin, there is a critical shortage of work space for staff and a need for improved study areas.

Facility upgrades are an essential aspect of space needs. The East Asian Library must receive an adequate heating, ventilation, and air conditioning system soon to save the collection from the ravages of high temperature and humidity. And, as the recent consolidation of University Archives with Special Collections demonstrates, there is a great need for more efficient use of space in Olin Library.

During the past year the Library staff has overcome some difficult problems and is moving confidently toward providing improved services. Communication with the faculty and student body, as well as with our friends and supporters in the community, will continue to play a significant role in the improvement of the Libraries as an effective resource. As this report attests, the Libraries are moving on many fronts to become the best they can be for our community of scholars.

Burton M. Wheeler
Interim Dean
University Libraries

Financial Condition of the University

The University ended fiscal year 1989 with income in excess of expenditures.

Below is a brief analysis of total income and expenditures, operations of separate fiscal units, and University assets and investments.

Total Income and Expenditures from Current Funds

The University has four major sources of income that support its activities. These are:

Operating Income

Operating income, primarily from payments by those who benefited directly from the University's operation, amounted to \$336,068,000. Student tuition and fees accounted for \$105,407,000. Patient and laboratory fees for medical services provided by faculty and staff amounted to \$96,258,000. Income from organized patient-care activities, such as the Edward Mallinckrodt Institute of Radiology, was \$62,329,000. The auxiliary enterprises, including residence halls, food service, and bookstores, had income of \$24,669,000. Sales and services of educational activities amounted to \$23,007,000. Current funds investment income was \$12,712,000, while other miscellaneous operating income totaled \$11,686,000.

Government Grants and Contracts

A large portion of the research done by the University is sponsored by grants

and contracts from governmental agencies, mostly federal, for specific sponsored projects. Total income from governmental sources expended in fiscal year 1989 was \$111,036,000, an increase of \$10,475,000 over fiscal year 1988. Scholarships and traineeships accounted for \$9,019,000 of the total and \$1,263,000 of the increase. In addition, 90 percent of the total \$4,683,000 student loan funds issued under the Perkins and Health Professions Loan Programs was funded by the federal government.

Private Gifts, Grants, and Contracts

Washington University received a total of \$49,339,000 in gifts and grants from private sources for various purposes. Major sources include alumni, individuals, business corporations, and foundations. The charts below present a breakdown of the total gifts, grants, and bequests received by source and purpose. The total \$49,339,000 was divided as follows: \$31,423,000 for operating purposes which includes \$4,271,000 in unrestricted gifts and \$27,152,000 for sponsored research, other sponsored programs, and scholarships; \$13,670,000 for endowment; \$4,015,000 for plant including gifts in kind; and \$231,000 for student loans. In the charts, \$1,207,000 in scholarships is combined with \$231,000 in loans for total student aid of \$1,438,000.

In addition to these private gift sources, the University also receives

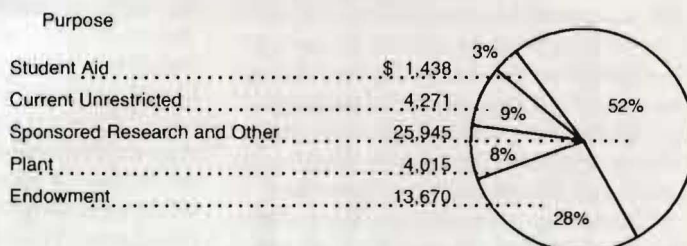
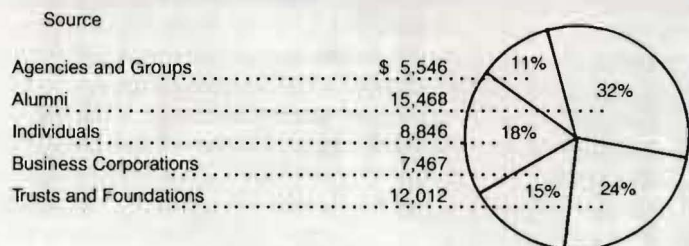


funds through private contracts for sponsored projects. In fiscal year 1989 these contracts amounted to \$15,491,000 which, when added to the \$27,152,000 referred to above, brings the total for sponsored programs to \$42,643,000. Of this total, \$5,122,000 is being held for future expenses on sponsored programs. The remaining \$37,521,000 was expended for current operations in fiscal year 1989 and, combined with the \$4,271,000 in unrestricted gifts, brings the total private gift, grant and contract income utilized for operating purposes to \$41,792,000. The ten-year chart on this page reflects a large bequest in 1981.

Endowment

The investment of endowed funds resulted in \$36,352,000 of income used to support operating expenditures.

Private Gifts, Grants and Bequests Received—\$49,339 (Thousands of Dollars)



The total current funds expenditures of Washington University in fiscal year 1989 amounted to \$482,755,000. In 1988 this figure was \$443,723,000. Approximately 57 percent of the increased expenditures was attributable to instruction and student aid. Research, primarily supported by outside agencies, accounted for another 19 percent; and another 8 percent was attributable to organized patient care activities.

Included in operating expenditures is student aid (scholarships, fellowships, and stipends) amounting to \$39,951,000 from University income and from governmental and private sources, but excluding College Work Study and the State of Missouri Student Grant Program. The summary on page 30 reflects undergraduate financial aid for the past three years.

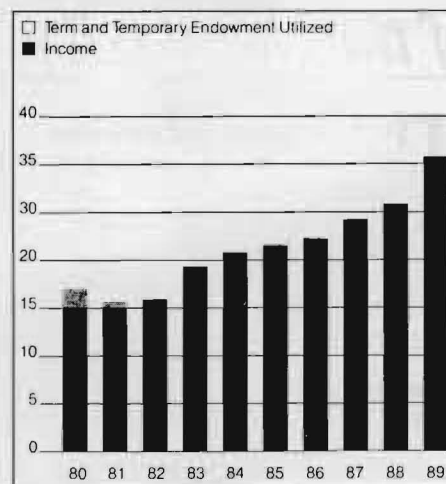
Student loans and capital expenditures for buildings are not

expended from current funds—their sources are separate fund categories. All student loans issued during fiscal year 1989 totaled \$5,763,000, compared with \$4,488,000 in the prior year. Net capital expenditures for buildings were \$23,084,000. Investments in all physical facilities, including buildings, land, equipment, and library acquisitions, increased \$51,418,000.

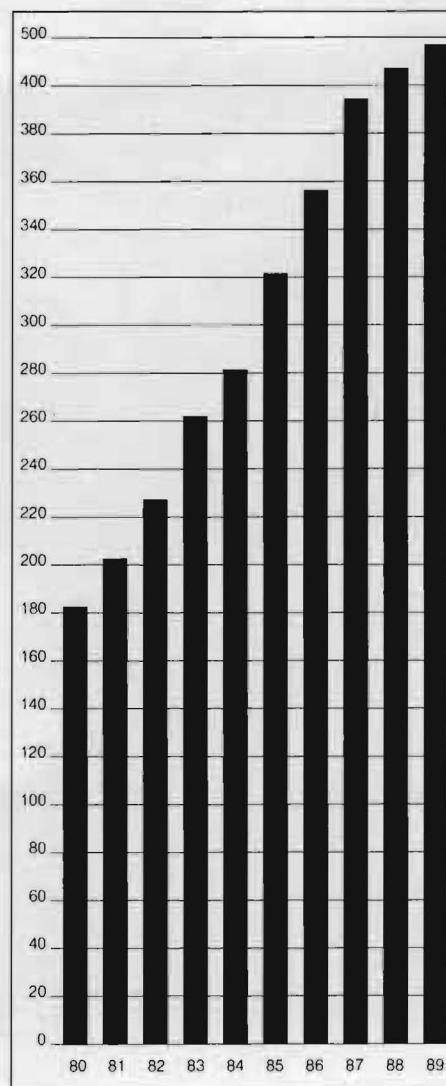
Operation of Separate Fiscal Units

The Trustees of the University have a policy under which each of the schools operates as a distinct fiscal unit. Under the policy, which is called the "reserve school system," the income and expenditures are reported separately for each unit, and each maintains its own individual reserves which are increased by any operating surpluses and decreased by any operating losses.

Endowment Resources Appropriated for Operating Purposes



Annual Expenditures Total Operating Expenditures

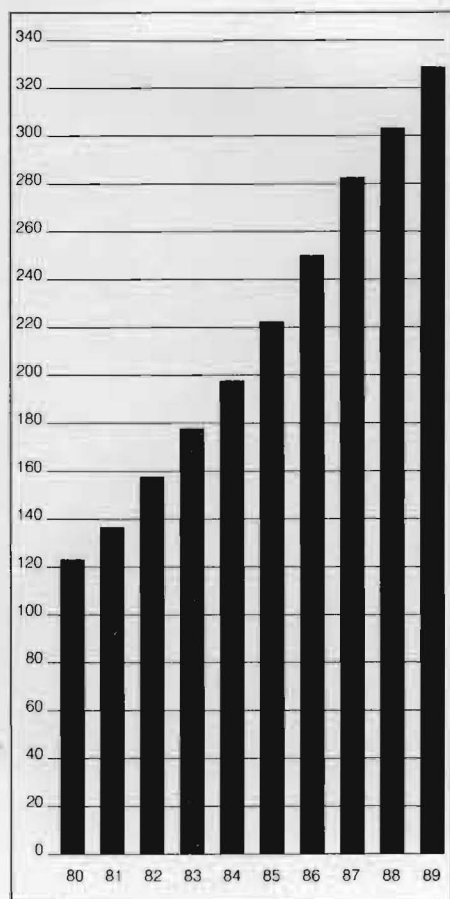


Ten-Year Comparisons

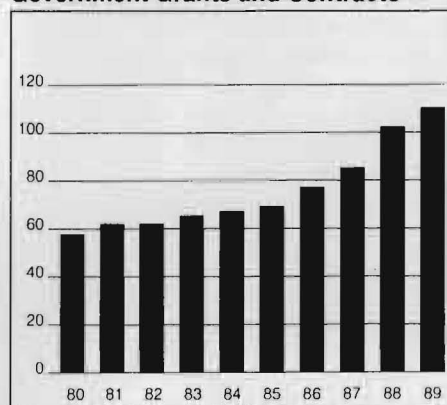
Millions of Dollars

Operating Income by Source

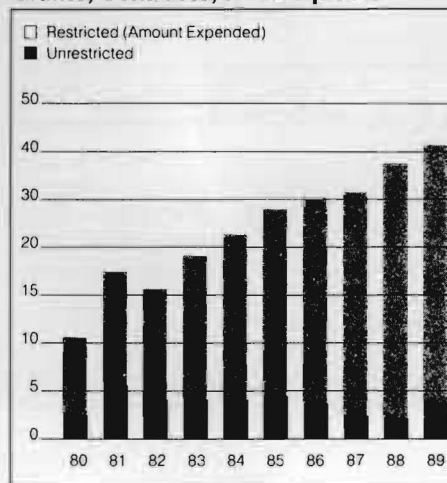
Revenue from Tuition and Services



Income Expended from Government Grants and Contracts



Operating Income From Private Gifts, Grants, Contracts, and Bequests



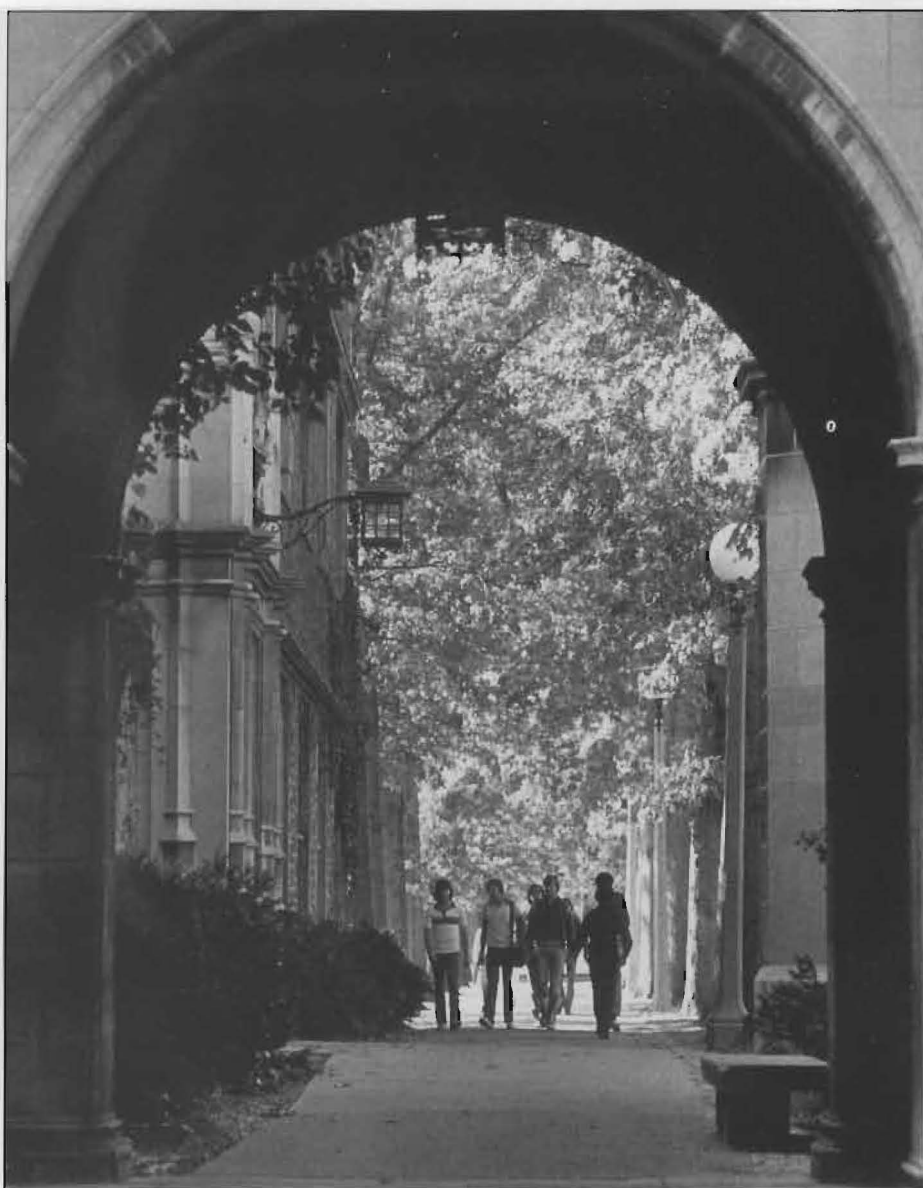
Summary of Current Funds Revenues, Expenditures, Transfers and Changes in General Reserves for Separate Fiscal Units of the University for Fiscal Year 1989

Thousands of Dollars

Total	Central Fiscal Unit	Faculty of Arts and Sciences	School of Architecture	School of Business	School of Engineering	School of Fine Arts	School of Law	School of Social Sciences
Revenues:								
\$ 105,407	Tuition and Fees	\$ 596	\$ 43,431	\$ 4,088	\$ 13,022	\$ 16,853	\$ 4,041	\$ 7,829
111,036	Government Grants and Contracts (Research, Training, Financial Aid to Students, and Other Purposes)	2,354	14,743	45	115	2,809	93	25
41,792	Private Gifts, Grants and Contracts	3,222	5,576	166	1,594	3,871	209	483
36,352	Endowment Income (A)(B)	5,314	10,213	263	923	2,041	228	596
12,712	Current Funds Investment Income	1,146	557	79	199	149	27	185
23,007	Sales and Services—Educational Activities	1,243	665	14	135	2,670	16	30
24,669	Sales and Services—Auxiliary Enterprises	22,011						
96,258	Patient and Laboratory Fees							
62,329	Organized Patient Care Activities—Sales and Services							
11,686	Other Income and Additions	3,055	785	50	73	324	18	69
\$ 525,248	Total Revenues	\$ 38,941	\$ 75,970	\$ 4,705	\$ 16,061	\$ 28,717	\$ 4,632	\$ 9,217
Expenditures and Mandatory Transfers:								
\$ 185,428	Instruction	\$ 549	\$ 26,044	\$ 2,307	\$ 7,162	\$ 13,814	\$ 2,058	\$ 2,843
84,150	Research	20	11,015	21	30	3,204		
34,058	Academic Support	167	8,607	566	3,395	3,223	719	2,852
11,431	Student Services	1,362	4,353	211	938	1,294	230	475
20,696	Institutional Support	2,560	4,350	193	924	1,180	205	621
34,102	Operation and Maintenance of Physical Plant	381	5,558	302	855	1,887	463	790
31,477	Scholarships and Fellowships	2,681	15,119	950	2,353	4,891	923	1,607
49,366	Organized Patient Care Activities							
21,192	Auxiliary Enterprises	18,813						
81	Miscellaneous Services	62		16				
10,774	Mandatory Transfers	4,548	328		288	413		
\$ 482,755	Total Expenditures and Mandatory Transfers	\$ 31,143	\$ 75,374	\$ 4,566	\$ 15,945	\$ 29,906	\$ 4,598	\$ 9,188
\$ 38,756	Transfers to committed reserves, plant, and other funds from revenues and prior years' accumulated reserves	\$ 7,549	\$ 596	\$ (115)	\$ 75	\$ (1,587)	\$ 10	\$ 20
\$ 521,511	Total Expenditures and Transfers	\$ 38,692	\$ 75,970	\$ 4,451	\$ 16,020	\$ 28,319	\$ 4,608	\$ 9,208
\$ 3,737	Net effect of revenues, expenditures, and transfers on General Reserves	\$ 249	\$ 0	\$ 254	\$ 41	\$ 398	\$ 24	\$ 9
(A) Endowment at Market Value with Income for:								
\$1,086,546	Support of Current Operations	\$393,560	\$117,605	\$6,997	\$25,744	\$43,512	\$6,932	\$17,017
228,921	Other Purposes	151,504	27,635	696	11,846	4,814	513	17,391
\$1,315,467	Total Endowment	\$545,064	\$145,240	\$7,693	\$37,590	\$48,326	\$7,445	\$34,408

(B) A portion of the Central Fiscal Unit Endowment Income is Distributed to Several Schools.

	School of Social Work	School of Dental Medicine	School of Medicine and Related Activities	Institute of Biomedical Computing
29	\$ 2,113	\$3,825	\$ 9,609	\$
25	180	547	87,865	2,260
83	53	389	26,226	3
96	681	29	16,064	
85	67	149	10,102	52
30	29	21	18,067	117
			2,658	
		1,496	94,762	
59	5	30	62,329	
17	\$ 3,128	\$6,486	\$334,961	\$2,430
43	\$ 779	\$2,972	\$126,358	\$ 542
52	89	347	68,061	1,363
75	802	1,880	11,472	375
21	281	222	2,060	5
90	178	210	10,151	118
07	327	780	22,627	281
		149	2,477	
			49,366	
			2,379	
			3	
			5,197	
38	\$ 2,640	\$6,560	\$300,151	\$2,684
20	\$ 413	\$ 7	\$ 31,852	\$ (64)
08	\$ 3,053	\$6,567	\$332,003	\$2,620
9	\$ 75	\$ (81)	\$ 2,958	\$ (190)
17	\$17,543	\$1,184	\$456,452	\$
91	71	2,713	11,738	
08	\$17,614	\$3,897	\$468,190	\$ 0



The Schools of Business, Dental Medicine, Engineering, Law, Medicine, and Social Work have been reserve units for a number of years. 1989 was the sixth year of separate fiscal status for the Schools of Architecture and Fine Arts, and for the Faculty of Arts and Sciences. General University services and activities such as Olin Library are grouped in one fiscal entity referred to as the Central Fiscal Unit. The Central Fiscal Unit is reimbursed for services rendered to the other units.

The Faculty of Arts and Sciences ended the year with no change in its general reserve. The School of Dentistry and the Institute of Biomedical Computing ended the fiscal year with a reduction in general reserves. All other Schools, as well as the Central Fiscal Unit, ended the year with an increase in general reserves.

A summary of Current Funds Revenues, Expenditures, Transfers, and Changes in General Reserves begins on page 28.

University Assets

Institutions of higher education and other not-for-profit organizations keep their financial resources in the form of funds to comply with the wishes of donors, and to account properly for government grants and contracts, as is required by state and federal law. A separate fund is established for each project or purpose. The thousands of funds for which Washington University is accountable are handled in four major groupings: current funds, student loan funds, endowment funds, and plant funds. With the exception of income from the investment of endowment funds, the operating revenue of current funds may not include resources of the other three fund groupings. The Summary of Assets, Liabilities and Fund Balances as of June 30, 1989, presents the assets and any claims against them for the four fund groupings.

Current funds are separated between unrestricted and restricted funds. The unrestricted current funds consist of revenues from the various income-producing operations of the University, plus unrestricted gifts and unrestricted earnings from endowment. Expenditures of these unrestricted funds is left to the discretion of the University. Other funds available for current operations restrict expenditures to a given department or school, or for special, designated purposes such as research in a specified field or by a specified person. Unrestricted and restricted funds are combined in the overview of current operations of the separate fiscal units presented previously. They are kept distinct in the accompanying Summary of Assets, Liabilities and Fund Balances.

As of June 30, 1989, the total assets of the current funds were \$291,255,000, including restricted current funds of \$43,759,000 and unrestricted current funds of \$247,496,000. Accounts payable and other such liabilities against unrestricted current funds amounted to \$55,065,000. Another \$122,792,000 of the unrestricted current fund assets was encumbered or otherwise administratively committed for specific future purposes. The net uncommitted general reserves were \$69,639,000.

Summary of Undergraduate Financial Aid (Excluding Loan Funds)

Thousands of Dollars

Fiscal Year	Tuition Remission	Restricted Scholarships	College Work Study	Pell Grants	State of Missouri Grants	Total
1987	\$12,044	\$3,538	\$1,059	\$606	\$770	\$18,017
1988	13,453	3,713	1,011	564	686	19,427
1989	12,493	3,707	1,332	793	659	18,984

Summary of Assets, Liabilities and Fund Balances as of June 30, 1989 (Excluding Agency Funds)

Thousands of Dollars

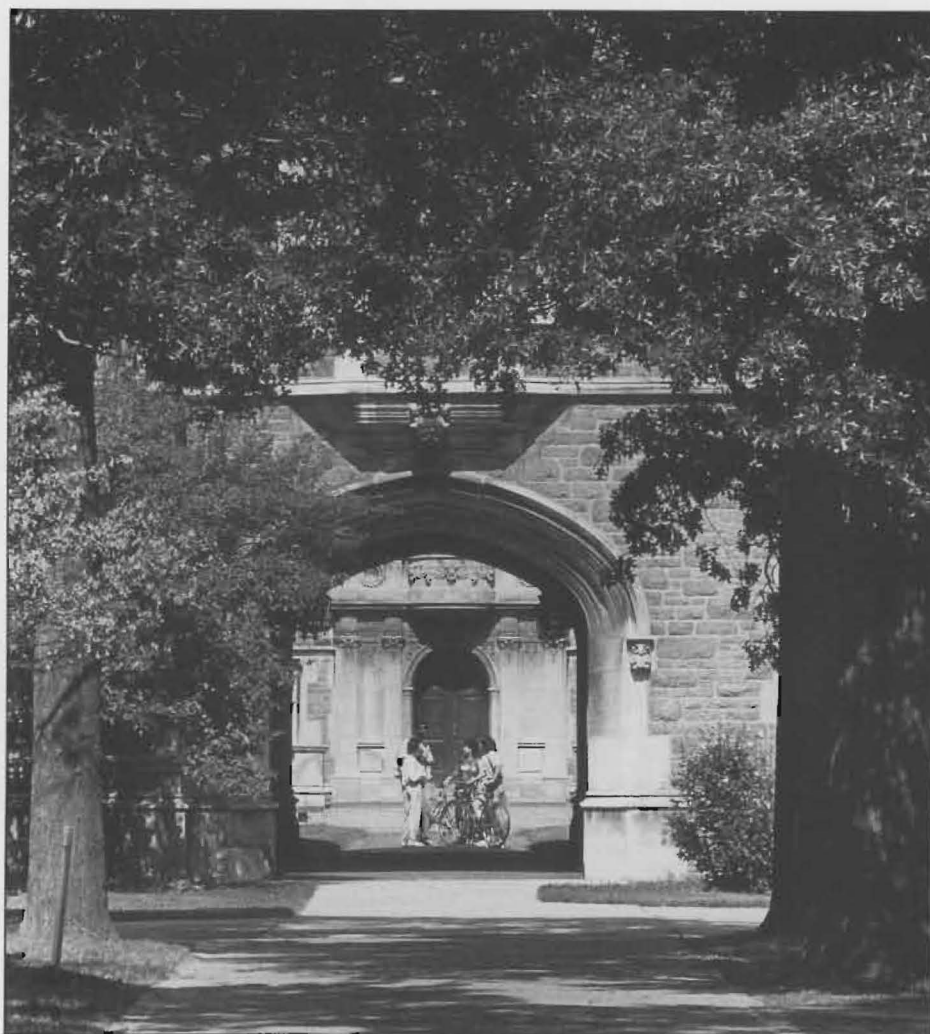
	Current Funds		Student Loan Funds	Endowment Funds	Plant Funds	Total
	Unrestricted	Restricted				
Assets:						
Cash and securities maturing within thirty days	\$ 62,371	\$15,648	\$ 2,923	\$ 59,028	\$100,547	\$ 240,517
Investments at book value	81,735	20,506	2,425	809,281	33,979	947,926
Receivables	94,353	7,507	32,331	2,355	1,922	138,468
Plant facilities					617,530	617,530
Other	9,037	98	441	7,924	2,356	19,856
Total Assets ..	\$247,496	\$43,759	\$38,120	\$878,588	\$756,334	\$1,964,297
Liabilities and Fund Balances:						
Liabilities	\$ 55,065	\$ 473	\$ 42	\$ 7,924	\$226,671	\$ 290,175
Deferred undistributed investment income		27				27
Encumbered and committed reserves	122,792					122,792
General reserves	69,639					69,639
Balance of funds		43,259	38,078	870,664	529,663	1,481,664
Total Liabilities and Fund Balances...	\$247,496	\$43,759	\$38,120	\$878,588	\$756,334	\$1,964,297

Student loan funds totaled \$38,120,000. The total student loan fund receivables were \$32,331,000, of which notes receivable from current and former students amounted to \$32,216,000. Outstanding loans to students included \$25,965,000 under the Perkins and Health Professions Loan Programs, which were 90 percent funded by the federal government.

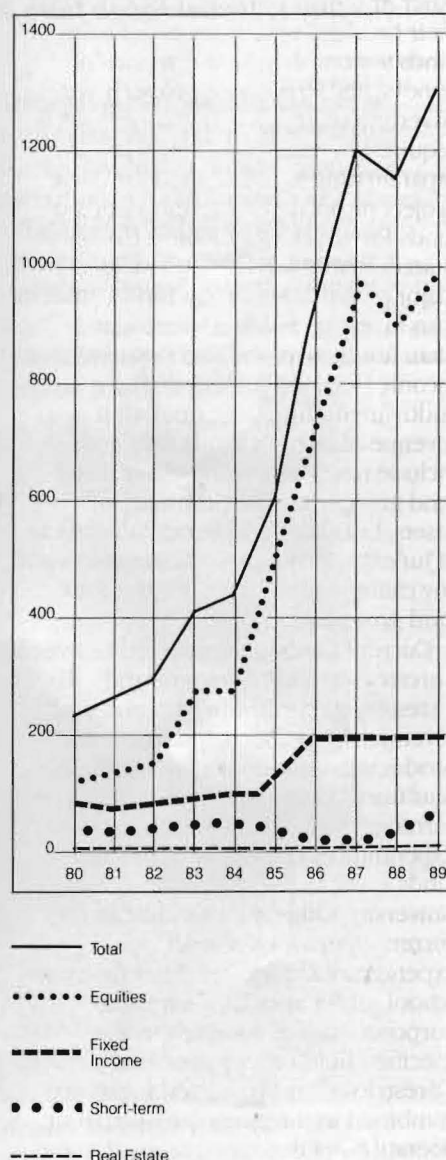
The total assets of the endowment fund at book value were \$878,588,000, including \$868,309,000 in cash and investments. The market value of endowment investments,

\$1,315,467,000, associated with each of the separate fiscal units is presented along with the summary of expenditures and income for each unit.

Plant funds totaled \$756,334,000. Of that amount, \$617,530,000 was invested in land, buildings, books, and equipment. Total borrowings for physical plant facilities as of June 30, 1989, were \$221,425,000, of which \$5,793,000 represents Housing and Urban Development bonds for student housing and dining facilities; and \$214,670,000 represents bonds issued



**Market Value of Endowment Funds
Fiscal Years Ended June 30
Millions of Dollars**



by the Health and Educational Facilities Authority of the State of Missouri to partially finance the construction and improvement of certain educational facilities.

Investments

Income (interest, dividends, rents, etc.) from all investments for the year ended June 30, 1989, totaled \$68,442,000 compared to \$59,942,000 for last year. Endowment income for the same period was \$47,119,000 compared to \$42,561,000 for last year.

The market value of all investments (endowment, current, plant, student loans, etc.) including cash, interfund advances (loans), and those securities maturing within 30 days totaled \$1,666,700,000 compared to \$1,394,679,000 for the preceding year.

The market value of endowment funds was \$1,315,467,000 on June 30, 1989, compared to \$1,141,302,000 the preceding year. A comparison of

endowment funds over the past ten years is presented in the accompanying chart.

The increase in market value of endowment funds of \$174,165,000 is the net result of gifts, grants, and net transfers of \$26,656,000, realized market gains of \$13,761,000 and market appreciation of \$133,748,000. These last two numbers indicate a net portfolio gain for the year of \$147,509,000.

On June 30, 1989, the endowment and total investment portfolios were diversified as follows:

	Endowment	Total Investments
Cash and Short-Term		
Securities	8.6%	20.7%
Fixed Income	14.8%	18.2%
Equities	74.7%	59.1%
Real Estate and Other	1.9%	2.0%
	<u>100.0%</u>	<u>100.0%</u>

Net income from securities lending was \$37,000 compared to last year's \$56,000.

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Effective July 1, 1988 through June 30, 1989

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¹President of TIAA-CREF, New York, New York after
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²Deceased September 1, 1988

³Retired December 31, 1988

⁴Retired April 27, 1989

⁵Ruder Finn, Inc. after February 1, 1989

⁶Chairman and Chief Executive Officer of Boatmen's
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⁷Deceased June 1, 1989

⁸Senior Vice President after March 28, 1989

⁹President of Plaza Development Company after
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¹⁰Through October 31, 1988

¹¹Beginning November 1, 1988

¹²Through February 28, 1989

¹³Beginning March 1, 1989

¹⁴Through March 31, 1989

COPING WITH CATASTROPHE

Students from the People's Republic embrace
their homeland with hopes and fears

By Steven J. Givens

In 1982, when China's educational system was recovering from Mao Zedong's Cultural Revolution, most Chinese college graduates hoped to get a chance to study in the United States or a European country, according to Haini Cai, a post-doctoral student in biology at Washington University. Cai was one of a select group of students that came to the United States that year. For many, it was a time of hope.



Joe Angeles

Eternal flame: Three days after the Beijing massacre, a candlelight vigil honoring the slain students was held on Washington's Quadrangle. The vigil concluded at dawn.

Because China is such a poor country badly in need of science, Cai, 33, wanted to learn all that was possible so she could return to China and "do great science. I had that idea until very recently," says Cai, who came to the United States on a biochemistry and molecular biology exchange program. "I'm being very frank because probably we're not supposed to think this way, but after long exposure to the Western culture and the political system of the United States, I started to appreciate more and more of their good points. So if I went back, I would miss what I have here—my freedom and the great privilege to do science. But if the China situation turns a little bit and there is greater freedom

and the development in science education permits, I would like to go back and work in China. When, is a good question. That's a big question mark."

If Cai were to return to her country now, she would find educational reform has taken another giant step backward. According to a recent article in the *Wall Street Journal*, China's college students are now required to attend government-conducted classes that redefine the events of the democracy movement. They also are ordered to write essays explaining their whereabouts during the rebellion and to state reasons for joining the Communist Party in its condemnation of the uprising.

This intervention of politics in nearly every aspect of Chinese life greatly concerns Longyin Chen, a postdoctoral biology student who came to the United States in the same exchange program that brought Cai here. Like Cai, Chen hopes that he, too, can someday do something for his country, but he worries that China's complicated politics will stand in the way.

The Chinese, he says, often wonder why the Japanese have been so successful. "I think it is basically the politics involved. One hundred years ago, Japan introduced Western ideology and that started their development," he explains. "Basically, they got out of the Oriental influence. Some people talk about the Chinese 'historical burden' being too heavy. The West invaded China and Japan almost at the same time, but Japan opened its door and absorbed the ideas, knowledge, culture, and politics. Then they changed, but they didn't totally Westernize. They still have their own culture. I think China worries too much about its heritage because the ideology of China's Communist Party is not simply Marxism or Leninism. It is a complicated mixture of socialist and communist ideology with ancient Chinese philosophy. Sometimes I think the politics of China are just too complicated to change."

On the evening of June 7, three days after the Tiananmen Square revolt, more than 500 Chinese and Americans wearing black armbands stood together on Washington University's Quadrangle to commemorate the slain students. During the candlelight vigil, the



"If there is greater freedom and the development in science education permits, I would like to go back and work in China. When, is a good question. That's a big question mark."

—Haini Cai

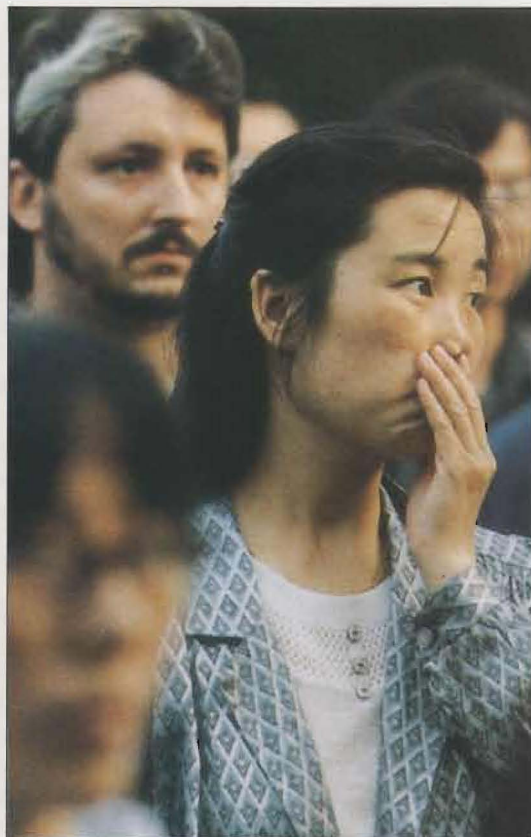
saddened demonstrators upraised a Chinese flag into which a hole had been burned where the largest star, symbolic of the Communist Party, appeared.

Burton Pu, 36, a doctoral student of English, was an organizer of the vigil. Unlike scientists Cai and Chen, Pu is, by his own description, "from a different world." He says his interest in American literature taught him much about the United States and its people long before he ever left China, where he taught at the university level for four years and served as an interpreter for visiting American professors.

"In literature I'm dealing with human beings with hearts and souls," says Pu, who came to the States in 1982 as part of a teacher exchange program with Whitman College in Walla Walla, Wash. "I think I paid more attention to how characters lived like human beings because in China I didn't feel I had that kind of value. Whether I lived or not didn't mean anything. In China we have two lives—one is a physical life and the other is a political life. The political life is more



Joe Angeles



Joe Angeles

Paying tribute:

Washington's Chinese students organized the vigil, attended by more than 500 individuals from several neighboring universities and communities. Memorial organizers distributed black armbands to those in attendance and took up a collection for the families of their fallen comrades in Beijing. During the vigil, many fought back tears in an emotional display of horror mixed with profound grief.

important than your physical life. If you are condemned as a counterrevolutionary, as the Chinese government has done to the students in Tiananmen Square, your political life is over. No matter how smart you are or how famous you are as an intellectual, if you do not have a political life, your physical life means nothing. They can send you to the border provinces or the labor camps, or they can just forget you."

According to Pu, the Chinese political system traditionally focuses on the community, and people are expected to sacrifice their individuality for the community. Again, he refers to literature to make his point. "This conflict has always been a very good subject for literature," Pu says. "No matter if it is a poem or a novel, you always find this conflict. But I do not wish to go to the extreme. If there was a way to combine both, that would be ideal. But I don't know whether we can do that because the conflict is always there."

As an intellectual, Pu thinks he should contribute to the development of his people and country. Yet current events in China have

changed his mind. He's waiting to see what will happen next.

"I don't think I can really survive or live in a satisfactory way in China if the political system there doesn't change," Pu says. "Scientists can work in their own world, but we [intellectuals] must speak out. It is very painful. After what I have done here [spoken with the media], there is evidence of my crime."

Cai has been told that the Chinese Embassy is collecting all TV news footage and newspaper clippings that concern Chinese student activity in the United States. Chen reported that he heard one person was arrested in China just because an ABC cameraman happened to catch his face in filming a crowd at Tiananmen Square. The students said that as long as they stayed in the United States, however, they would feel safe. "I think most Chinese students are safe," offers Chen. "We do not need to face soldiers."

As for the future of exchange programs, the students predicted that such programs will continue. "The Chinese government is desperately needing the technology and the science for the country's development," Cai says. "It is still sending students out."

Washington's students described China's movement toward democracy as a cycle—one that has been repeated before and which is driven by opposing points of view.

"We all see things differently," explains Pu. "The problem in China is that we are only allowed to look at the world in one way, and right now that is the way that Deng Xiaoping is asking us to look at it. But it is impossible for human beings to look at the world in exactly the same way. History is point of view. The reason that the massacre took place in Tiananmen Square is that those in power were challenged by different points of view. One way to solve the problem was to use soldiers to kill people, but you can look at the problem in another way, in a peaceful way. But they didn't want to accept that. For this reason, China cannot move forward. Either history repeats itself, or we are repeating our history." ■

Steven J. Givens is a freelance writer and editor living in St. Louis.

SON OF HEAVEN

An exhibit of rare and exquisite Chinese artifacts brings the imperial tradition to life



By Candace O'Connor

Nothing else in 18th-century China could match the pageantry of imperial court assemblies held each day at dawn. Musicians played, incense burners smoked, and into the palace courtyard marched thousands of high officials wearing robes stitched with brilliant silk insignias. At the crack of a whip the crowd kowtowed, then peered through the darkness toward a rare and awesome sight: the gold-lacquered dragon throne of the emperor, known reverently to his subjects as the "Son of Heaven."

Few did more than glimpse this sovereign who sat amid splendid objects on a high and distant platform. "The Chinese have a saying," says Robert L. Thorp, chairman and associate professor of art history and archaeology. "Heaven is high, and the emperor is far away."

But for the past year, these emperors and their artifacts have come closer to Americans through a dazzling exhibition, *Son of Heaven: Imperial Arts of China*, which has drawn more than a million visitors during six-month stays in Seattle, Washington, and Columbus, Ohio. One of the most ambitious loan shows ever sent abroad by China, *Son of Heaven* is the first to focus on objects created for China's imperial institution.

The exhibition took three years of planning by the Chinese Ministry of Culture and by a succession of American sponsors before its Seattle opening in July 1988. Thorp served as American curator, culling 225 objects from 21 Chinese museums in Beijing and eight provinces. He developed the show's innovative "five-theme" approach and created the beautifully illustrated, 200-page catalog. His Chinese counterpart was Yang Xiaoneng, now a Washington graduate student in Thorp's own department.

The *Son of Heaven* artifacts—exquisitely crafted of silver, jade, bronze, silk, cloisonné, stone, and lacquer—won universal acclaim. At the Seattle Center's Flag Pavilion, more than 300 visitors lined up each hour to view them. Columbus wanted the show badly enough to spend \$2 million renovating a

Candace O'Connor is a freelance writer and editor based in St. Louis.

vacant city high school to house it, and television stations in both cities aired documentaries on the treasures.

The exhibition opened amid a shower of superlatives. Its eager American sponsors compared it to the 1978 Egyptian extravaganza, *The Treasures of Tutankhamen*. In the *China Daily*, a front-page story called it "the most significant cultural event to take place in post-revolutionary Sino-American relations."

But behind the scenes, *Son of Heaven* was beset by problems. The Chinese side was tinged by nepotism; the American side, by feuding and mismanagement. Major U.S. museums turned down the show because of its size, huge costs, and short lead time. After initial hopes for three or four venues, sponsors were relieved to settle for exhibit space in two cities, the minimum required for the show to take place.

How successful was *Son of Heaven*, which closed in Columbus on Labor Day weekend? "We produced one of the best exhibitions ever done with China and the best catalog," says Thorp. "It was a collection of objects that has never been seen in China, and will probably not be seen together again."

China's imperial age dawned in the late third century B.C. and ended with the fall of the last emperor in 1911. In all, more than 300 rulers, believed to embody a special link between heaven and human society, had society's wealth and talents at their command. They commissioned work from the country's finest artists, who themselves remained anonymous.

Since 1949, the Chinese have developed an active, well-financed effort to bring these objects out of the ground. "Today," says Thorp, "Chinese archaeology is the most exciting area in world archaeology"

In tracing the history of these imperial artifacts, Thorp could have chosen a simple chronological sequence. Instead, he decided to focus on half a dozen time periods, the great periods of Chinese unity. He planned a thematic presentation centered around five aspects of the emperor's life:



Emperor's bat: Court regulations required the emperors to don summer bats, left, in the third lunar month. Winter headgear was prescribed for the colder season.

Mynas on a pine: A hanging silk scroll painted by Emperor Wuzong in the 16th-century Ming Dynasty carries a message of long life and good health to its recipient.

- **The Outer Court:** At these dawn assemblies the emperor performed his duties as head of state. To depict this court scene, exhibit organizers created an 18th-century Qing dynasty throne ensemble complete with silk cushion and carpet, cloisonné elephants, and jade scepter.
- **The Inner Court:** This luxurious court, hidden inside the palace city, was home to the emperor, his family, and staff. The exhibition featured household objects, including a rock crystal and agate necklace from the sixth century B.C. and a 10th-century porcelain pillow in the shape of a child.
- **The Altar:** Each day the emperor was expected to discharge solemn ritual obligations. Altar accessories from the sixth century, notably bronze tripods and a bronze altar table, were displayed.
- **The Temple:** The emperor also served as moral teacher and patron of China's three religious traditions: Buddhism, Taoism, and Confucianism. Objects reflecting these traditions include glazed tiles from the doorway of the celebrated 15th-century Bao'en Temple that once stood near Nanjing.
- **The Tomb:** Imperial tombs contained priceless objects believed necessary for the emperor's happiness in the afterlife. The exhibition featured a jade burial suit, laced with gold thread, that once held the body of a Western Han princess of the second century B.C.

Thorp first heard about "Son of Heaven" in spring 1985, the year he joined Washington's faculty. A friend and fellow Chinese art historian, Jerome Silbergeld, called to ask for Thorp's help in choosing objects for an exciting new Chinese art exhibition. For Thorp, who had previously written catalog essays for three other Chinese exhibitions, the invitation was hard to resist.

"I was anxious to do more in China," he says, "where it's hard even to get access to objects in museums. Working with an exhibition is the best way to see the objects and meet the curators."

Son of Heaven seemed to bear the distinc-

tive stamp of the Chinese government. The idea had come just months earlier from Deng Pufang, son of China's senior leader, Deng Xiaoping. The elder Deng had proposed the idea to American entrepreneur Norman Swanson during a banquet in Beijing. Deng Pufang, confined to a wheelchair since he was thrown out of a dormitory window by Red Guards during the Cultural Revolution, suggested loaning art treasures as a fundraiser for the organization he headed, China's Welfare Fund for the Handicapped.

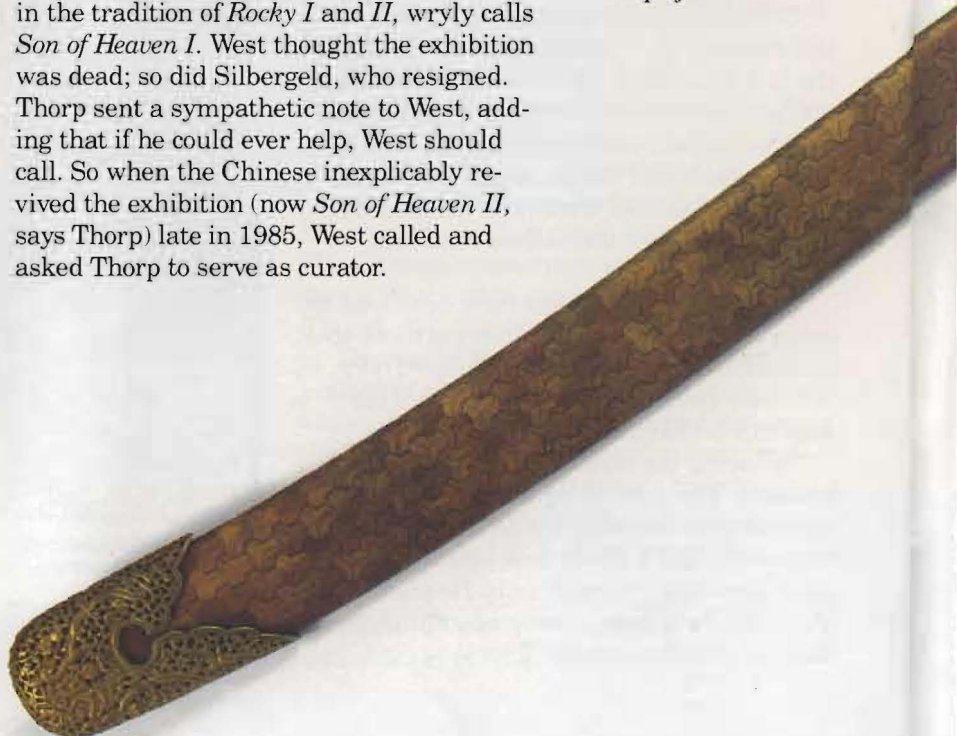
Swanson, president of the Citizen Ambassador Program, a group allied with the well-known goodwill program People to People, jumped at the chance to become involved. Back in the States, he called his college classmate, Harvey West, director of Seattle's Henry Gallery of Art, who quickly got Silbergeld, then Thorp involved.

Early in the fall of 1985, however, plans for the exhibition ran aground. The Chinese leadership was shifting, and support for the project faded, partly over the issue of nepotism. "The Chinese didn't want to set the precedent of an exhibition raising money for an organization run by the son or daughter of a high leader," Thorp says. "Yet a lot of things happen in China just because of those connections."

And that marked the end of what Thorp, in the tradition of *Rocky I* and *II*, wryly calls *Son of Heaven I*. West thought the exhibition was dead; so did Silbergeld, who resigned. Thorp sent a sympathetic note to West, adding that if he could ever help, West should call. So when the Chinese inexplicably revived the exhibition (now *Son of Heaven II*, says Thorp) late in 1985, West called and asked Thorp to serve as curator.



Emperor's helmet: A special variety of pearl from the Songhua River of Heilongjiang Province crowns the helmet, above, worn by the Qianlong emperor. Both the helmet and the emperor's boots, top right, represent 18th-century court taste, a blend of native Chinese and Manchu habits and preferences.





Imperial blade: The Qianlong emperor carried his sword, above, to military reviews, hunts, and inspection tours. The handle is jade and the scabbard, fashioned of tree bark that looks lacquered in gold.



Qianlong emperor's armor: Constructed of iron plates riveted together and covered with dark silk, this armor is housed in the Shenyang Palace Museum.



Lamp with male figure: This furnishing from the inner court is made of bronze and silver. Dating from the late fourth century B.C., it stands 26 inches high.

Opposite page: Detail of the emperor's seal pictured near the upper right corner of "Mynas on a pine" (p. 21).



Seated Buddha: Measuring 31 inches high, the stone Buddha at left was created in the first decade of the eighth century. It is considered one of the finest products of imperial workmanship.

Bronze vessel: Above, supported by three rhinoceroses, this treasure from the late fourth century B.C. was excavated in 1977 from the tombs of the Zhongshan kings. The surface is textured with interlaced dragon designs that were stamped in the clay casting molds.



Photos by Don Hamilton

Soon Thorp, who speaks fluent Chinese, was off to China on the first of eight trips. To his pleasant surprise, Chinese curators had added to his artifact "wish list" some exciting recent finds that had not yet been publicized. Yang Xiaoneng, the canny young curator assigned to the project by the Chinese Overseas Archaeological Exhibition Corporation, an arm of the Ministry of Culture, also made significant additions to the list, including a chime with 26 bronze bells from the sixth century B.C.

Negotiations took months; however, an exhausting trip to five provinces in May 1986 yielded unexpected treasures. At Nanjing City Museum, the curator took Thorp to a private room and brought out a spectacular belt made of carved jade plaques mounted on gold, which Thorp secured for the exhibition.

While object selection was proceeding smoothly, the question of American sponsorship remained uncertain. Initial expressions of interest from major American museums evaporated when Thorp and West approached them with a space requirement of 15 to 20,000 square feet, a budget of more than \$5 million, and a tight time schedule imposed by the Chinese.

With the venue question unsettled, Thorp, hoping the show wouldn't be scrapped, was forced to begin catalog production. Weary of catalogs that catered primarily to art historians, he centered this one on a series of essays aimed at a general audience. Soon afterward, American sponsorship was estab-

lished. Son of Heaven, Inc., dominated by two charitable organizations—Seattle's Resource Center for the Handicapped and the California-based Vesper Society—was the group that finally emerged.

The Seattle installation of the exhibit's delicate artifacts was a nightmare, recalls Thorp. First, he discovered that the packing job in Beijing had been sorely inadequate. Next, delays caused by West meant that their two installation crews began work only four days before the exhibit was due to open. "My biggest regret is that I participated in this very dangerous installation," says Thorp, adding that no object was damaged. "Just 15 minutes before the doors opened, and having been up all night, I was still putting objects in the last case."

After West's much-publicized firing a month later—reportedly the culmination of a long-standing feud with the president of Son of Heaven, Inc.—Thorp established a new regime. He hired a registrar to superintend the move from Seattle to Columbus, invested in \$25,000 worth of new packing material to safeguard the objects, and insisted upon two weeks for the installation, which this time went smoothly.

Would he do it all again? Yes, he says. Yet the recent political events in China may stand in the way of future artistic and scholarly collaboration. "The Chinese were starting to open up a variety of new possibilities and *Son of Heaven* was among them," Thorp says sadly. "In retrospect, this may have been one flower in the spring—and now the spring is over." ■

"We produced one of the best exhibitions ever done with China. It was a collection of objects that has never been seen in China, and will probably not be seen together again."



Ideas matter. A respect for ideas that is, paradoxically, inseparable from the constant questioning of them is at the heart of the Western liberal tradition. That tradition comprises ideas that *want* to challenge each other, raising questions that never stop. Encountering these ideas and participating in the heady dialogue among them—not in a superficial way but responsibly, realizing their impact on how one's personal life is structured—this kind of “thinking down the bone” is at the heart of Washington University's Text and Tradition program, a planned sequence of courses that offers freshmen and sophomores a challenging form of general education.

“I would hate to go to a physician who had a mastery of cell function and not a whit of knowledge about the nature of humanity,” commented one student in evaluating Natural Sciences 202A, one of the Text and Tradition “core” courses. “Science is such an integral part of human existence,” the student continued, “yet it is generally only analyzed from the perspective of ‘spectator.’ Why is there not more done to teach how one can live *with* science—how to incorporate the ‘facts’—

and find some kind of *value* for existence in it all? . . . It seems to me we are very ignorant geniuses. . . .”

Awareness that it is indeed possible to be an “ignorant genius” may be the beginning of wisdom, if wisdom can be considered the ability to assign value to different kinds of knowledge. But this kind of thinking takes practice, takes the friction of ideas rubbing against each other and striking sparks over and over again.

Both students and faculty participating in the program feel the lift and vitality that a genuine team effort can produce. Students reported being intrigued, informed, entertained, and occasionally even mildly shocked at the spectacle of instructors openly disagreeing with each other in the early Western history course team-taught by Classics Professor George Pepe and History Professor Peter Riesenbergh. “The books are big, and the ideas are big,” says Riesenbergh. “We’d come to the same text with different backgrounds, perspectives, and values. We had a lot of open, friendly discussion and put-downs. The students began to see that scholarship isn’t a finished, cut-and-dried thing.”

“A coherent experience in Western history and thought is what these courses offer,” says Pepe. “You look at the typical standard humanities distribution requirement of nine or 12 hours and it offers freedom, flexibility, and breadth—your basic cafeteria setup. But you have to look at the downside, too—you may end up with a bunch of courses that are anarchic, isolated, and unrelated.” The seven courses in the Text and Tradition sequence, on the other hand, are carefully structured to build upon one another both chronologically and argumentatively.

“They trace out continuing arguments about certain highly controversial issues in Western history— notions like liberty that raise a lot of questions. What is the relation of the individual to the community? To the universe? What is the nature of the good life? What kind of society should we have? What about the role of property? Is there anything problematic about property?” The books keep coming back again and again to the same questions, Pepe notes. “The books themselves

“STRIKING SPARKS”

Designed to immerse science majors and pre-med students in the humanities, Text and Tradition thrives on the clash of ideas

by George Hickenlooper

are conscious of each other, and this makes for continuity."

Text and Tradition has achieved growing popularity with students precisely because it is not bland "Wonder Bread," says English Professor Daniel Shea. This is because up to seven courses—in literature, the natural sciences, and the social sciences—are pre-selected to focus on books and ideas of unquestionable significance.

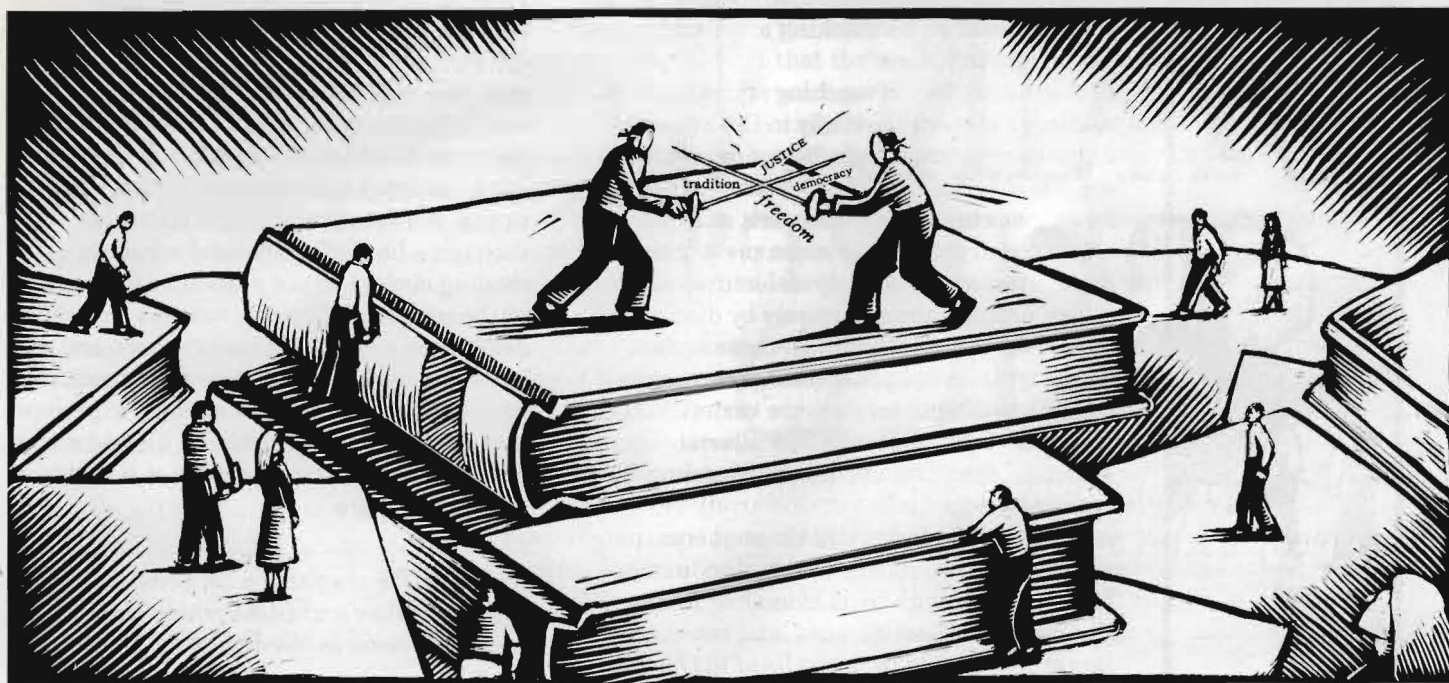
The 60 to 65 entering freshmen who elect this humanities minor each year are also a self-selected group, observes English Professor John Morris. "It's a coherent-looking package. Young people *like* structure. They develop a certain esprit during the two years of the program based on shared experiences." The sense of belonging is augmented by the fact that each student is assigned a faculty adviser who teaches in the program (and is a full-time teacher of both undergraduate and graduate students).

Planned jointly by faculty members from across the College of Arts and Sciences, Text and Tradition stresses the importance of reading classic texts deeply and then writing critically and perceptively about them. The texts offer "a sustained argument about substance," observes Professor Linda Salamon, dean of the College. "These are the ideas that

have shaped our capacity to think. They are enduring concepts that have had meaning over long periods of time and have contemporary significance today. They are important keystones of Western culture on which students can hone their minds."

But Text and Tradition, she is quick to point out, is not just a clone of the great books programs that originated at campuses such as the University of Chicago or Columbia University earlier in the century. "Starting with the initial 'great books' idea," she explains, "we have deliberately constructed the program in an historical pattern. It's important to understand the historical context from which political, social, and scientific attitudes arise. Since many of the students are pre-med and prospective science majors, we want to show how humanistic ways of approaching the world can be applied to the natural and social sciences."

"I saw the need for Text and Tradition when I realized that my son, who was majoring in economics, had never heard of Adam Smith," explains Hortense and Tobias Lewin University Professor in the Humanities Naomi Lebowitz, A.M. '55, Ph.D. '62, who has been involved with the program since its inception just over three years ago. In class, Lebowitz and her students bring alive the



Randy Lynius

"The classic texts selected for the Text and Tradition program are 'important keystones of Western culture on which students can hone their minds.'"

—Linda Salamon

conversation between the 18th-century *philosophe* Diderot and the 16th-century squire Montaigne, who developed the essay into an art form by exploring the world within himself. "Our task is to compose not books but our characters," Montaigne wrote; Diderot responded at a more urgent moment two centuries later, saying, "Yes, composing our character is our task, but we have to compose it *au passage* — on the move, in flight."

Why "on the move"? Lebowitz asks, and a student points out the pinch and pain of economic realities that, for Diderot, qualified all universal claims. Both writers have a preoccupation with self-knowledge, which for neither is static. "I may contradict myself, but I never contradict the truth," says Montaigne, and Diderot agrees that the truth itself is in motion.

"Any kind of ideal claim, so says the thinking of recent neo-historicism, must be ruthlessly exposed," Lebowitz explains. "But the liberal tradition isn't negative. It's really a conversation between the ideal claim and the critical skepticism that the ideal claim provokes. Literature educates us to compassion. Students who, with their own critical essays and comments in class, enter into the dialogue going on between great writers feel more intimate with those writers. The writers have shared their anxieties with us so we know that, as thinking and feeling people, we are not alone."

A great variety of teaching styles and pedagogical modes prevails in the program. Some courses are taught by a single professor, one is team-taught, one features a professor and three guest lecturers, and one is organized around six or seven presenters. Some courses rely mainly on lectures, while others proceed almost entirely by discussion. According to Dean Salamon, these styles (along with an age span among instructors from 35 to 62) not only assure variety in the students' experience, but also alleviate instructors' anxieties about overextending their own knowledge.

Of the seven courses in the sequence, two are grounded on intellectual history in a political context, with texts extending from Thucydides to Levi-Strauss, and two cover literature ranging from the *Iliad* to *One Hun-*

dred Years of Solitude. The sequence rounds out with a course in the development of theories in natural science, from the Copernican revolution to plate tectonics and DNA. This course, Natural Science 202A, illustrates the philosophical and methodological issues raised by two contrasting notions of scientific change—revolutionary and evolutionary. By exploring profoundly influential scientific "revolutions" since the Renaissance, the course examines how modern science has developed and assesses the validity of two different, competing views of scientific understanding.

A parallel course dealing with the emergence of social science since the time of Adam Smith asks the question, "Can people develop social institutions that truly serve their interests, both individual and collective?" The final course is a seminar that assumes and applies previous text readings along with ideas that reflect the compelling interests of the instructor.

One of Text and Tradition's stated goals is to offer students exposure to a broad range of recognized powerful teachers on the College faculty. For their part, the faculty enjoy exposure to some of the best students on the campus. The experience can be invigorating for seasoned faculty members.

Wrote Professor Shea, summing up his experience with the course "The Emergence of the Modern Mind": "Whatever these students may have carried away from the course, I would have to claim that the semester's experience benefited me as much as any teaching experience I can remember. The opportunity to meet ideas straight on, rather than through a haze of specialized scholarship, reading books I do not ordinarily teach, and in the company of bright, curious, caring students from a variety of backgrounds and a variety of career ambitions—from medicine to undecided—was a rejuvenating experience and reminded me—I speak as if I had almost forgotten—what the essentials of teaching and learning are." ■

George Hickenlooper is a St. Louis-based freelance writer and editor whose work frequently appears in Washington University Magazine.



HEALTH CARE COSTS

Setting the policies, containing the cost, and rationing the care—how much is enough?

The statistics are startling: Over the past 30 years, health care expenditures in the United States have risen from six percent of our gross national product to 11 percent. The American population is aging, and those over 65 account for more than three times the per capita expenditure of those under 65. In recent years, the cost of medical care in the United States has markedly exceeded the cost-of-living index.

This acceleration of medical expenses arises from our increased ability to prolong human lives, the introduction of expensive new treatments, and the labor intensiveness of the medical business. The inescapable question is whether we, as individuals or as a society, can any longer afford the best available medical care.

These and related issues were discussed at a conference on "Cost Containment and the Quality of Care" held on the Washington University campus February 16-18, 1989. The event was jointly sponsored by the Department of Philosophy, the John M. Olin School of Business, and the School of Medicine.

According to conference coordinator Carl Wellman, professor of philosophy and Hortense and Tobias Lewin Distinguished Professor in the Humanities at Washington University, the occasion for the conference was "widespread consternation over the fact that the cost of medical care in the United States has been rising sharply in recent years. Our focus was the dilemma of whether we, as individuals or as a society, should contain costs even if it means less good medical care, or maintain the quality of care no matter what sacrifices the consequent costs would impose upon us.

"Implicit within this central question are a number of philosophical issues about whether there is a human right to medical care, how the quality of care should be defined, and whether justice requires equal access to medical care for all citizens."

These issues bring with them practical problems regarding the management of hospitals and health maintenance organizations, employee benefit programs, and the impact of financial constraints upon the practice of physicians.

Columnist George Will gave the conference's keynote address, which appears in abbreviated form on the next page. Over the course of two days, four main speakers—Baruch Brody, Mark Pauly, Daniel Callahan, and Allen Buchanan—drew from their areas of health care expertise to explore the complex issues of cost containment. Excerpts from their talks follow.



Public Affairs, Public Policy, and the American Society—George Will

The great demographic fact about our country is that the population is aging. And in a welfare state, the aging of the population means an enormous intergenerational transfer of wealth. The federal government's budget today, like that of the other welfare states, is a mechanism transferring wealth from the young to the old on an unprecedented scale because the principal consumers of welfare state transfer payments are the elderly—pensions and, most especially, medical care.

According to Everett Koop, the former Surgeon General of the United States, there are 12,000 Americans 100 years old or older. And in just 16 years, in the year 2005, there will be 100,000 Americans 100 years old or older. You could make a city, an extremely quiet city, out of them.

Now this aging of the American population is in part a tribute to new medical technologies, and in part to the scientific conquest of degenerative diseases. But more than that, it is a testimony to the fact that we're living more rationally. And that, in turn, testifies to a great governmental success story. I think it can be safely said that what government does best is disseminate public health information. This is a good time to think about that because it was 25 years ago last month, in January 1964, that the government issued the first Surgeon General's report connecting cigarettes and cancer. What we have learned since then is that in a largely middle class, broadly educated, information-acquiring country, the populace modifies its behavior with astonishing speed and to an astonishing degree in response to public health information. And this is, in many ways, the key to cost containment.

The emergence of health as a right and of medicine as a huge industry is changing America in so many ways. Seven percent of the American work force is engaged in health care, the third largest consumer expenditure after shelter and food. The average American works one month a year to pay for health care in all its forms. Certainly the health care

allocation system we have today will not work forever. A report in the *Los Angeles Times* on Sunday (Feb. 12) said that, given current projected growth levels of health spending, Medicare would be larger in the year 2015, a bigger expenditure than defense and Social Security combined. What's more, we're experiencing a peculiar form of the revolution of rising expectations that is characteristic of modern life everywhere. There is a belief in a kind of entitlement revolution—an "I'm entitled" spirit—as each year it seems we discover new rights and new entitlements, new things owed to us.

Now at the heart of the health part of this new entitlement revolution lies, I think, an important fallacy: Health is, by and large, a result of medicine, and increased spending on medicine is the key to increased public health. This gives rise to a subsidiary fallacy that says if you therefore control the allocation of medicine, you can control and guarantee the achievement of a right to health, a right commensurate with whatever the status of the health technology is at the moment. Now as a result of this, you get a hospital center highly technological in disease-oriented medical care. And that is, I think, probably wasteful and certainly disappointing over time because medicine is not equivalent to health, and dollars spent on medicine do not correlate to increased public health. I'll give you an example. It is estimated that new medical technologies contributed about three percent to the conquest of tuberculosis. The conquest of tuberculosis had to do with improved air, housing, space, hygiene, food handling, and all the rest—things not connected often in the public mind with any particular progress against any particular disease. Americans, however, choose to focus, because we're a highly technological people, on successful medical technologies.

What is medicine? Is a nontherapeutic abortion medicine? Is cosmetic surgery medicine? What is the aim of medicine? Is it health or is it well-being? Increasingly we see the aim of medicine defined not just as health, but as well-being. This gives a very aggrandizing role to doctors whose changing status in America has been, for many of



Is Ethical Behavior in Medical Markets a Luxury Good?

Why, after all, are we concerned with the fraction of GNP going to health care? Are there reasons why we might not be spending our medical care money wisely? My favorite "yes" answer refers to what in economics literature is called "moral hazard." This is the notion that, with ordinary kinds of insurance, people will spend more on things that are not really worth it to them as compared to what they would do if they were uninsured and faced the full price. Buying the conventional health insurance, the Blue Cross/Blue Shield type that you all grew up with, is one way to save. It makes expensive things look cheap. From an economic point of view, that's almost bound to lead to distortion. Another way to say it is that insurance is the 10,000-person version of the behavior where, when you

go out to dinner and the word comes around, "Let's just split the check six ways," you suddenly decide to order another cocktail. In a sense, even though you are going to have to end up paying for the expensive thing that your behavior generates, you bear only a tiny fraction of the total cost.

The social willingness and the efficiency of overriding individual levels of quantity or quality health care will probably vary with taxpayer income. Subsidization is likely to be a luxury good as taxpayer income rises. Analyses of state spending of Medicaid have consistently indicated that higher income states do spend more, all things equal, on Medicaid benefits for the poor in those states. They also found that the larger the fraction of spending that the federal govern-

ment matches, the more taxpayers seem willing to spend. Is such behavior ethically appropriate? Should a rich state like New York spend more than a poor state like Arkansas? I believe that it is appropriate for communities with different income levels to define adequate care in different ways.

The most useful tool of economic analysis is not a computerized econometric model; it's the introspectoscope. So I turn that on and ask myself, "What would I personally be willing to pay for other people?"

Mark Pauly

Professor in the Department of Health Care Systems, University of Pennsylvania

Maintaining Quality While Rationing Resources: Are They Compatible?

In his book *Worried Sick*, Dr. Arthur Barsky looks at an interesting phenomenon in the American health care system: in comparison with 20 or 30 years ago, more people now report themselves feeling sick. They go to doctors more. They take more sick days. And yet, in fact, they are significantly healthier than they were 30 years ago. The more we have improved health care and access to it, the worse people seem to feel. Does that suggest our quality of health is going up or down?

The word "quality" is ubiquitous in our society. In the case of health care, we see quality as related to whether a particular standard of technology is used, whether there is a certain technical expertise present, and the extent to which that expertise is actually manifest. Quality is also very closely related to the amount of money one spends, a measure ordinarily thought of as a test of quality in itself.

One might say that the best is the

enemy of the good in this case. We have become addicted to the best as part of our health care system. But, if we could settle for something less—a good and adequate system—we might indeed have a system offering an acceptable quality of care. Let us assume that 20 years from now there will be a fully implantable artificial heart. We can guess that the older age groups would want to use the technology and that, indeed, the artificial heart could save the lives of people 90 and over, giving them a few more good years of life at a cost of some \$150,000 to \$200,000 a year. Would it be said that we have an unfair system if certain rich people over 90 could buy it, but we decided that our public purse would not pay for it? Would the concept of quality, both as a technical and moral concept, require that we make it available to those over 90 and make it available free if they couldn't afford it?

I would argue no—not at all. Only if we make the mistake of equating quality

with the absolute best state-of-the-art technology, and only if we argue that the moral quality of the system requires that everyone have what the richest person might get—only by those standards would we say that a failure to provide would indicate a low-quality health care system for people in that age group. If we have simply good public health, good immunization, a basic system of primary and emergency care, we have probably given most people a reasonably good chance of living a full life. Rationing can be made perfectly tolerable if we reduce our standards, if we simply look for the good and not for the best, if we look to give people reasonable things but not look to give them everything they might want. That seems to me the only way, in fact, that we can survive rationing.

Dr. Daniel Callahan

Director, The Hastings Center, Briarcliff Manor, New York

The Ethical Challenge of Cost Containment

The health care sector is an economic black hole, or at least has the potential for being such. The high utilization centers on third-party, fee-for-service reimbursement, coupled with the almost limitless power of physicians to generate demand, and threatens to drain ever-increasing amounts of private and public resources from all other sectors of the economy. These resources are being pumped into health care. If there were a genuine competitive market for health care, then we could say that continued expansion of the health care sector at the expense of other areas of economic growth reflects the informed preferences of health care consumers.

But, of course, the health care system is far from being a competitive market. Instead, it is fueled by massive infusions of public resources in the form of Veterans Administration hospitals, Medicaid and Medicare reimbursements, and public subsidies in medical education and research. Nor are our health-care consumers well-informed economic

agents who bear the full cost of their decisions. In other sectors of the economy resource allocation is, to a much larger extent, fueled by consumer—not provider—demand and guided toward efficiency by competition.

One popular strategy for curbing costs is to increase competition. Yet efforts to improve access and contain cost can affect the quality of care and the character of the physician-patient relationship. Some predict that if the health care sector continues to become more competitive and large-scale corporations come to dominate, larger numbers of physicians will become financially tied to hospitals or other facilities, or will otherwise come under tight control by corporate boards and administrators, whose chief concern is the financial bottom line. This change would inevitably alter the physician-patient relationship.

Allen Buchanan

Professor of Philosophy, University of Arizona



Illustrations by David Povilaitis

Ethical Reflections on International Health Care Expenditures

I want to put to rest some people who think we can avoid rationing, the deliberate decision to refuse to provide people health care which they want and from which they could benefit because we don't want to pay the cost. We only fool ourselves if we believe that eliminating waste—health care from which people won't benefit—and emphasizing preventive medicine will do the job. If it ever works, however, preventive medicine may bankrupt all of us because a dramatic increase in life expectancy brings with it real cost issues. Already, citizens over 65 account for more than three times the per capita health expenditures of citizens under 65. Members of this group are far more likely to need care for a wide variety of chronic illnesses, and in many cases they will also need custodial nurs-

ing home care.

How do we decide how much medicine we should provide to those who can benefit from it? I present one of two suggestions that have a fundamental theme: We are not going to decide at all. My proposal places the emphasis on patients' individual rationing choices rather than on collective social choices. Suppose we have decided upon a certain amount of money to allocate to health care expenditures for those who cannot pay for health care themselves. The question posed for any rationing policy is which health care to provide. We could provide a level of funding in the form of a voucher to those who are medically indigent and allow them to choose. They might select some scheme which emphasizes more preventive medicine and extensive testing by not funding

certain expensive high technology. Such patients might get routine chest x-rays on admission. On the other hand, some people might choose a more catastrophe-oriented policy—one which downplays some forms of primary care and some preventive medicine. Then, in rare cases where it was needed, they would get the transplant that would be funded by the fact that they would not get routine chest x-rays. The scheme crucially involves patient decision-making and patient understanding, rather than passivity and ignorance.

Baruch A. Brody

Director, Center for Ethics, Medicine and Public Issues, Baylor College of Medicine; Leon Jaworsky Professor of Biomedical Ethics, Rice University

them, troubling. The medical profession today has never been more heroic in its capacity to do things, and yet doctors have probably never been more disliked.

Today doctors are armed with enormous technologies. They reflect a terrific division of labor in their approach to patients, and a visit to a doctor or hospital is a forbidding, not to say expensive, experience not relished by anyone. And indeed doctors, lawyers, and to an increasing extent journalists, share a common fate in public esteem. That is, as people develop an increased feeling of dependency on a kind of priesthood, they become less patient with it and more hostile. What the average American wants in a doctor can be given, as most of our fantasies and dreams can be given, by a look at television. The average American wants Dr. Welby as his doctor who, from my limited viewing of the program, never practiced medicine, ever. That is, he was a family counselor. What Americans would really like is Dr. Welby with a cat scan.

Well, one good result of the forbidding nature of the medical enterprise is a kind of impulse that we've seen in the '70s and the '80s—to take health out of the hands of doctors. There's an enormous responsiveness on the part of the American people to take their health into their own hands. Now in a way it seems banal in an era of cracking the genetic code and of multiple organ transplants to say that the secret to substantial improvements in public health and, simultaneously, the secret to controlling one of the grave political problems, which is the imbalance in federal revenues, is to behave more sensibly. But we've learned too much about the behavioral basis of diseases.

Medicine and medical technologies are blurring the very line between life and death. The Karen Ann Quinlan case is simply the most visible example of a problem confronting doctors, hospitals, children, and parents all over the country every day. Furthermore, medical developments are going to revolutionize—perhaps coming from Missouri itself—American social policies with regard to abortion because we cannot continue with the following anomaly written

into our law. The Supreme Court has said—whether it understands what it said or not—that through all nine months of a pregnancy a fetus is beyond the effective protection of the state. I'm not judging that argument; I'm saying it sits uneasily next to the rapid development of intrauterine medicine. A fetus in crisis can be given vitamins, medicine, can have fluids drawn from its skull, can have fluids drawn from its abdomen. Now when the law says a fetus lacks all rights including the right to protection, yet the fetus can be treated by medicine as a patient, you have what should be a very troubling conflict between the law and the mores of medicine, the law and the Hippocratic Oath, which says, roughly, do no harm.

Furthermore, as we socialize the costs of illness, we have to re-examine some of the traditional arguments in society about individual responsibilities and rights. Interesting for illustrative purposes are the helmet laws for motorcyclists. It was one thing to say "It's my business if I go out and scramble my brains on the highway" when there wasn't a kind of social provision of medical care. It is quite different when you are, through insurance programs, public and private, socializing the costs of your irrational behavior.

It is important, I think, in considering health issues, the government's responsibility, and the quickening awareness of our individual responsibility through our individual behavior for our own well-being, to understand that life is a fatal experience. It was Montaigne who said, "You do not die from being sick. You die of being alive." And all health policy has to be set with that in mind, particularly in the 1990s when we come up against the arduous moral task of allocating—some would say rationing—health care. ■

"Life is a fatal experience. It was Montaigne who said, 'You do not die from being sick. You die of being alive.'"

— George Will

George Will, whose newspaper column has been syndicated by the Washington Post since 1974, today has columns appearing in more than 460 newspapers. In 1976, he became a regular Newsweek contributing editor. He won the 1977 Pulitzer Prize for commentary.



Eric Bouvet/Gamma Liaison

Vive l'opéra! Designed by architect Carlos Ott, M.A.U.D. '72, the Paris Opera starred in a three-day celebration in mid-July, saluting the 200th birthday of the French Revolution. President François Mitterand commissioned and inaugurated the \$400 million steel-and-marble structure that overlooks the Place de la Bastille.